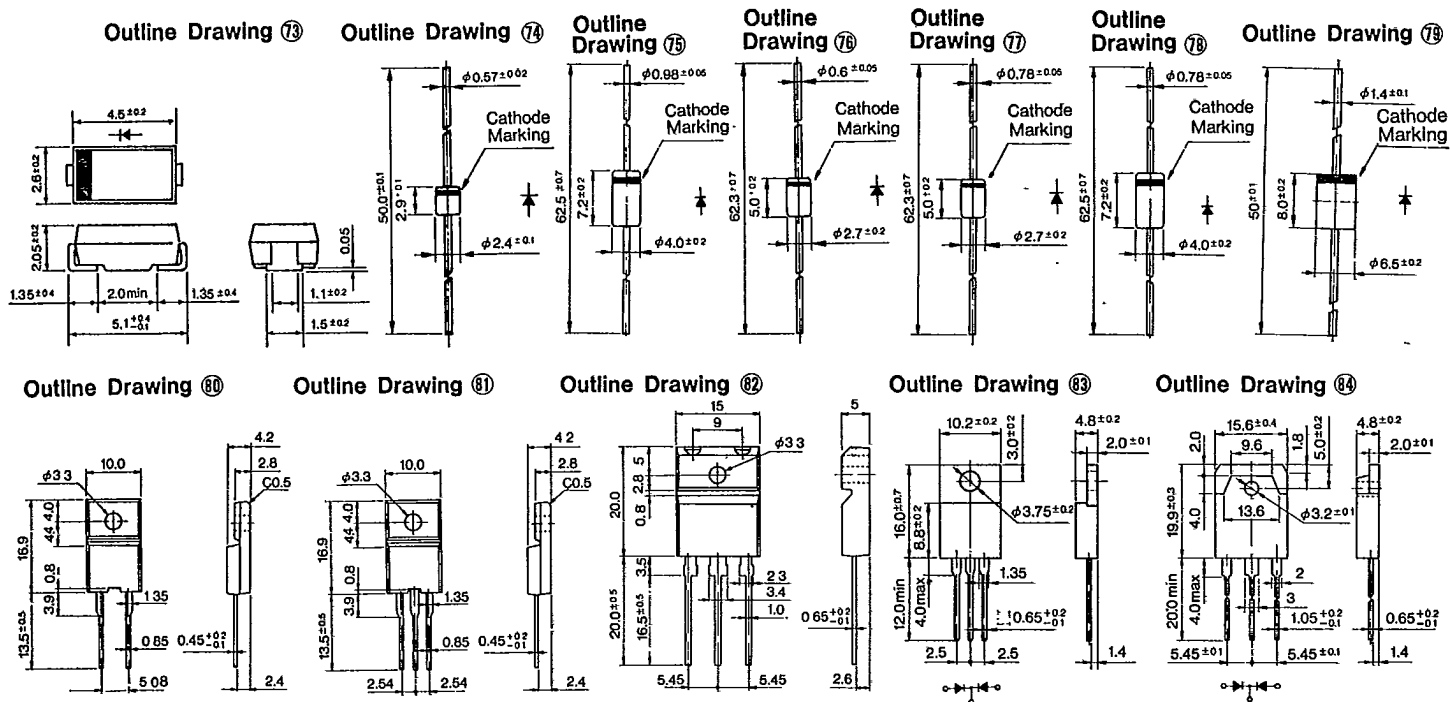


Schottky Barrier Diodes

V_{RM}: 30~90V I_o: 0.7~30A

SFPB/AK/EK/RK/FMB/CTB/RBA/RBV

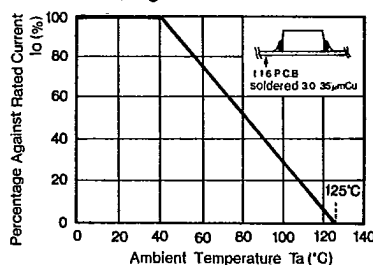
Rating / Characteristics	Absolute Maximum Ratings							Electrical Characteristics (Ta = 25°C)							Others													
	V _{RSM} (V)	V _{RM}	I _o (A)	I _{FSM} (A)	I _{2t} (A²S)	T _j (°C)	T _{stg} (°C)	V _F (V)	I _F (mA)	I _R (mA)	I _{R(H)} (mA)	t _{rr} (μs)	R _{th(j-ℓ)} (°C/W)	Outline Drawing	Weight(g)	Taping	Note											
Type No.	Per chip		with Fin	50Hz Half Sine Wave Single Pulse				Max. per chip	I _F (A)	V _R = V _{RM} max (per chip)	V _R = V _{RM} , T _j = 125°C max (per chip)		I _F /I _{RP} (mA)															
SFPB-54	45	40	1.0	60				0.55	1.0	1.0	50	0.05		⑦③	0.072		Surface Mount											
SFPB-64	45	40	1.5					2.0	7.5		0.1																	
SFPB-56	60	60	0.7					10	0.7			5.0																
SFPB-59	90	90							0.81			50 (T _j = 100°C)																
AK 03	35	30	1.0	25				0.6	1.0	5.0		50	0.2		⑦④	0.13												
AK 04	45	40						0.62	0.7		7.5																	
AK 06	60	60	0.7	10				0.81	5.0																			
AK 09	90	90						0.55	1.5		7.5																	
EK 03	35	30	1.0	40				0.62	0.7	1.0	50	0.1		⑦⑤	0.3	Available												
EK 04	45	40						0.81	5.0																			
EK 06	60	60	0.7	10				0.55	2.0		5.0							50	0.2									
EK 09	90	90						0.62	0.7		7.5																	
EK 13	35	30	1.5	40				0.81	1.5	5.0	50	0.1		⑦⑥	0.45													
EK 14	45	40						0.55	2.0		5.0							50	0.2									
EK 16	60	60						0.62	1.5		1.0							15	0.1									
EK 19	90	90						0.81	2.0		2.0							10										
RK 13	35	30	1.7	60				0.55	2.0	5.0	50	0.2		⑦⑦	0.6													
RK 14	45	40						0.62	1.5		1.0							15	0.1									
RK 16	60	60						1.5	25		40							5.0	50	0.2								
RK 19	90	90																			0.81	2.0	2.0	10				
RK 33	35	30	2.5	50				0.55	2.5	5.0	50	0.1		⑦⑧	0.45													
RK 34	45	40						0.62	2.0		2.0							20	0.1									
RK 36	60	60						2.0	40		50							5.0	50	0.2								
RK 39	90	90																			0.81	3.0	3.0	15				
RK 43	35	30	3.0	80				0.55	3.0	5.0	50	0.1		⑦⑨	1.2													
RK 44	45	40						0.62	3.5		3.0							35	0.1									
RK 46	60	60						3.5	70		60							5.0	35	0.2								
RK 49	90	90																			0.81	5.0	5.0	100				
FMB-G14L	45	40	5.0	60	18	- 40 ~ + 125		0.55	5.0	5.0	100	0.1		⑧①	2.1													
FMB-G24H	45	40	10	150	112.5				10	10	65																	
FMB-23	35	30	4.0	50						2.0	5.0							35	20	15	35	⑧②	5.5					
FMB-24	45	40																								40	8	
FMB-26	60	60				50	12.5																					
FMB-29	90	90																										
FMB-24M	45	40	6.0	60	18			0.55	3.0	5.0	35	0.1		⑧③	2.6													
FMB-24H	40	40	15	100	50				7.5	7.5	50																	
FMB-23L	35	30	10	60						5.0	5.0							35	50	35	⑧④	6.1						
FMB-24L	48	40																							50	12.5		
FMB-26L	60	60				60	18																					
FMB-29L	90	90				8.0	60					0.58	4.0	2.5	50	35												
FMB-33S	35	30	12	75				0.81	6.0	5.0	35	0.2		⑧⑤	4.25													
FMB-34S	48	40																										
FMB-33	35	30						15	150		28							50	0.55	7.5	10	65	75	50	2.0	⑧⑥	5.5	
FMB-34	48	40																										
FMB-36	60	60	100																									
FMB-39	90	90																										
FMB-33M	35	30	30	300	112.5			0.55	15	20	100	500/500																
FMB-34M	48	40																										
FMB-36M	60	60						150																				
FMB-39M	90	90						20																				
CTB-24	45	40	4.0	60				0.55	2.0	5	50	0.1		⑧⑦	6.1													
CTB-24L	48	40	10	60				5.0	35		40							35										
CTB-33S	35	30	12	75				6.0	80		65							100	500/500	2.0	⑧⑧	4.25						
CTB-34S	48	40																							15	150		
CTB-33	35	30	15	150				0.55	10	10	100	500/500		⑧⑨	4.25													
CTB-34	48	40																30	300									
CTB-33M	35	30	30	300				0.62	2.0	2.0	20	100/100	5.0	⑧⑩	4.25													
CTB-34M	48	40																										
RBA-406B	60	60	4.0	40				0.62	2.0	2.0	20	100/100	5.0	⑧⑩	4.25													



⑦③~⑧⑤ Plastic Molded, Flammability: UL94V-0 or Equivalent

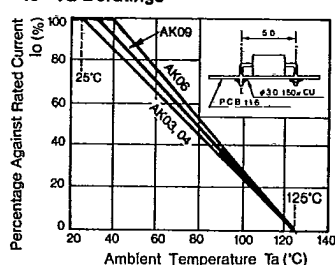
SFPB-54.64.56.59

Io-Ta Deratings

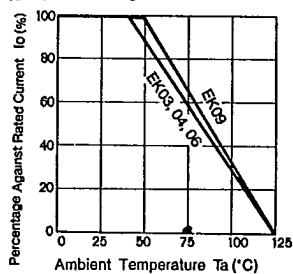


AK 03.04.06.09

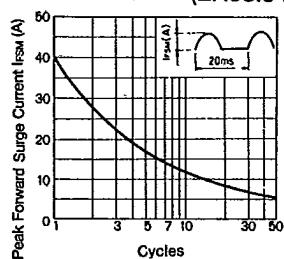
Io-Ta Deratings



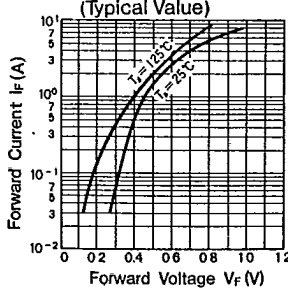
Io-Ta Deratings

EK 03
EK 04
EK 06
EK 09

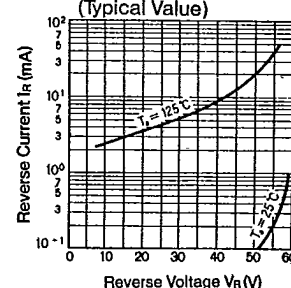
IFSM Characteristics (EK03.04)



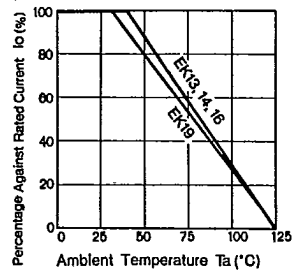
IF-VF Characteristics (Typical Value)



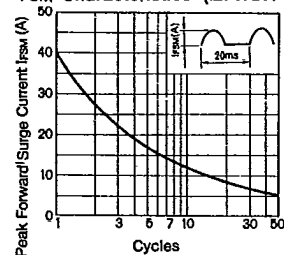
IR - VR Characteristics (Typical Value)



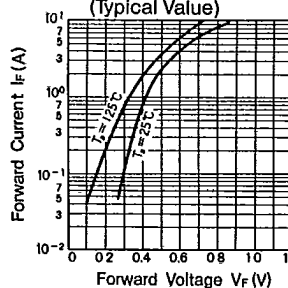
Io-Ta Deratings

EK 13
EK 14
EK 16
EK 19

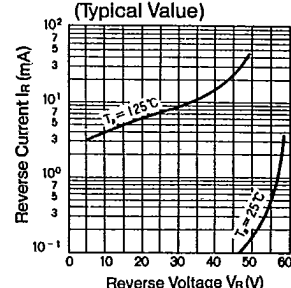
IFSM Characteristics (EK13.14)



IF-VF Characteristics (Typical Value)



IR - VR Characteristics (Typical Value)

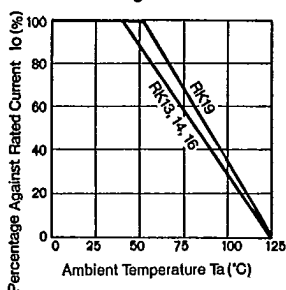


Schottky Barrier Diodes

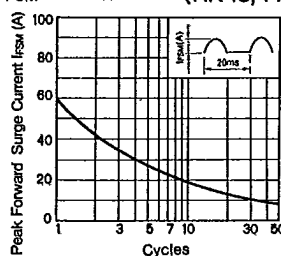
T-23-01

RK 13
RK 14
RK 16
RK 19

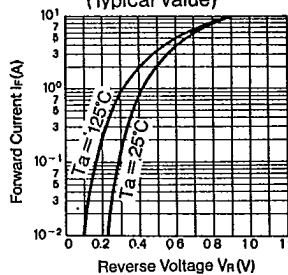
Io - Ta Deratings



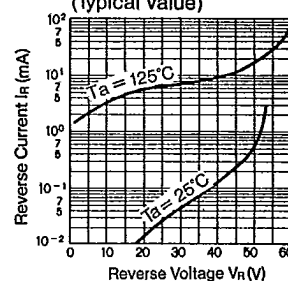
IFSM Characteristics (RK 13, 14)



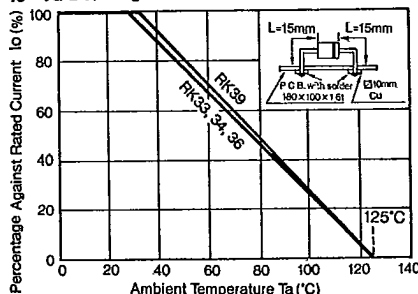
IF - VF Characteristics (Typical Value)



IR - VR Characteristics (Typical Value)

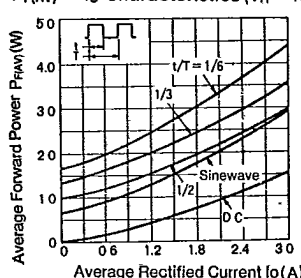
RK 33
RK 34
RK 36
RK 39

Io - Ta Deratings

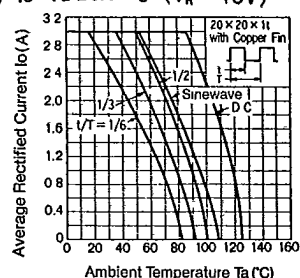


RK 43 RK 44

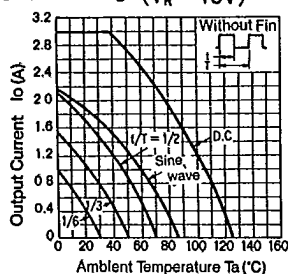
PF(AV) - Io Characteristics (VR = 40V)



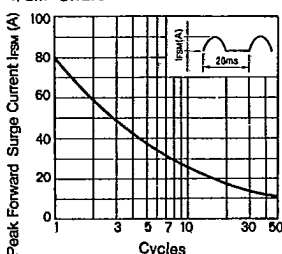
Io - Ta Deratings (VR = 40V)



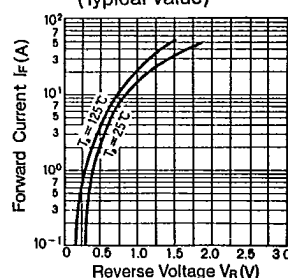
Io - Ta Deratings (VR = 40V)



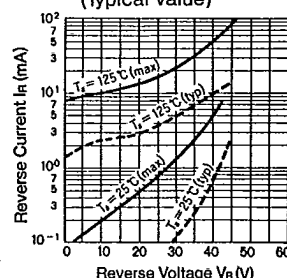
IFSM Characteristics



IF - VF Characteristics (Typical Value)

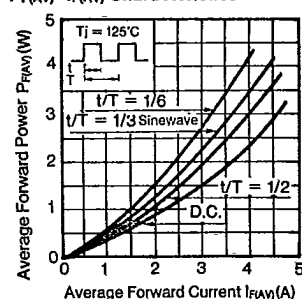


IR - VR Characteristics (Typical Value)

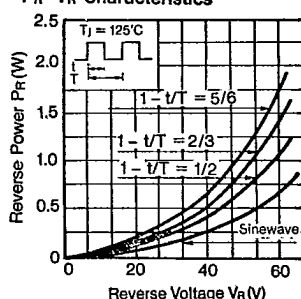


RK 46

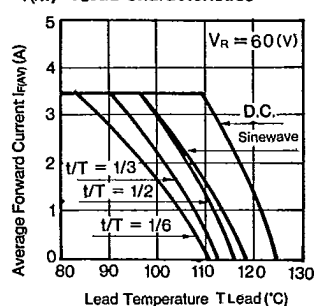
PF(AV) - IF(AV) Characteristics



PR - VR Characteristics

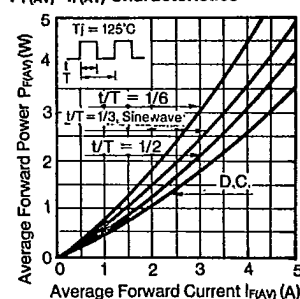


IF(AV) - TLead Characteristics

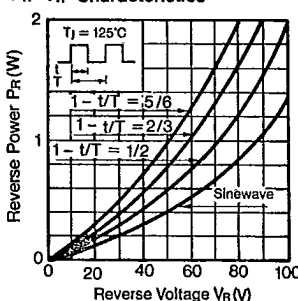


RK 49

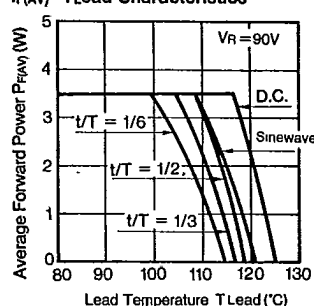
PF(AV) - IF(AV) Characteristics



PR - VR Characteristics

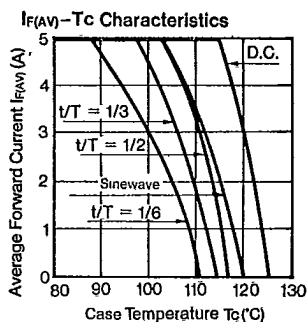
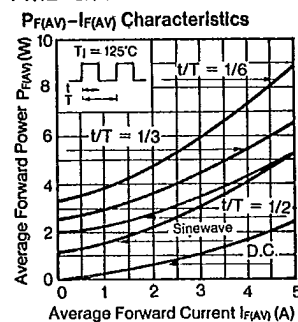


IF(AV) - TLead Characteristics

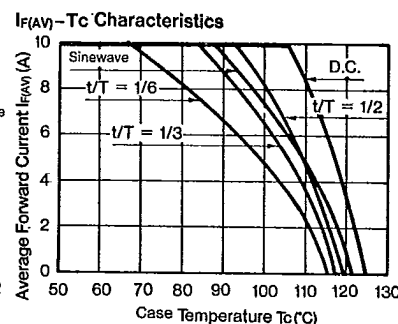
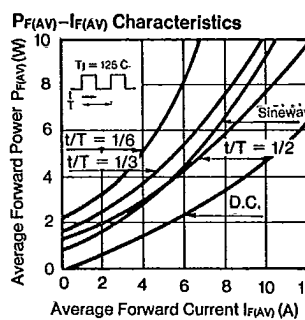


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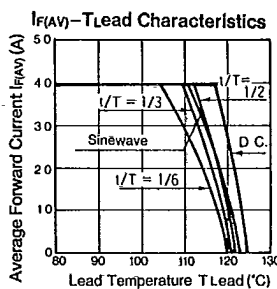
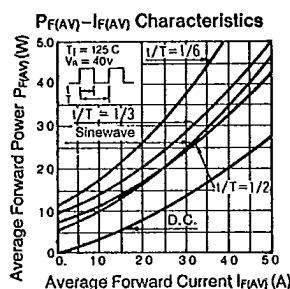
FMB-G14L



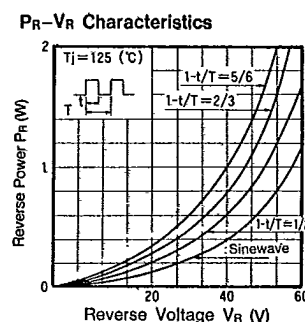
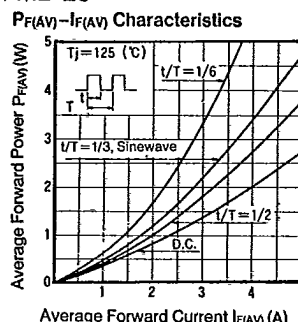
FMB-G24H



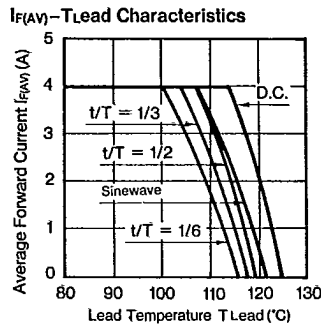
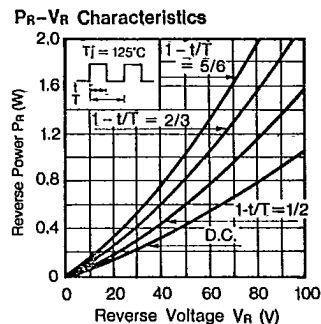
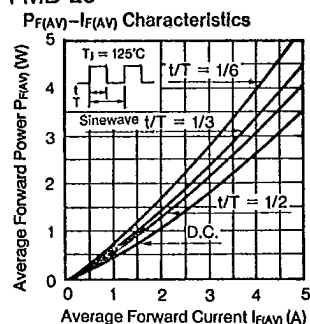
FMB-23
FMB-24



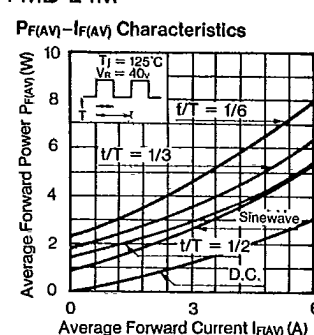
FMB-26



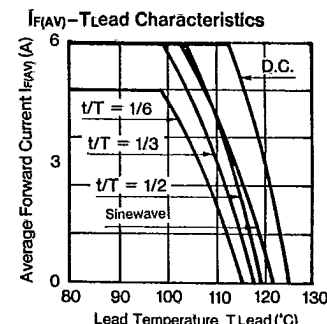
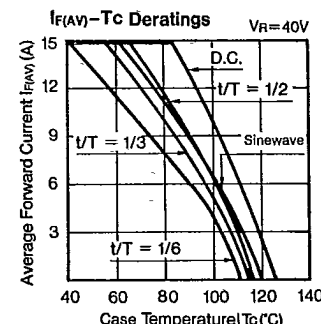
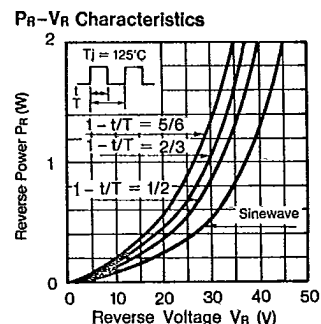
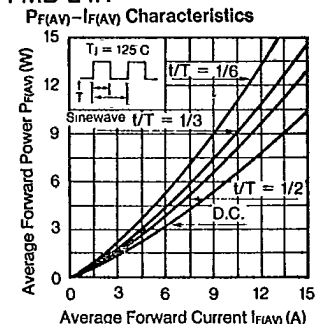
FMB-29



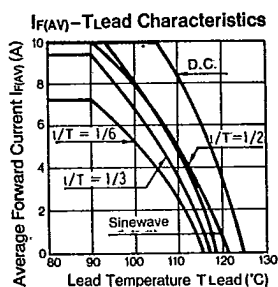
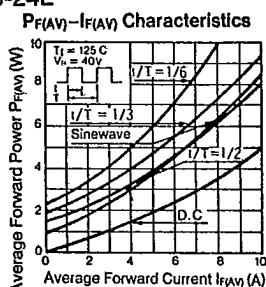
FMB-24M



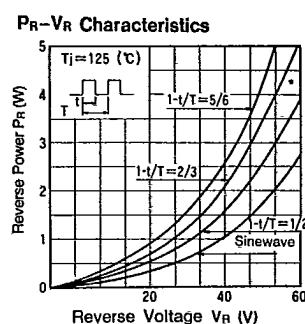
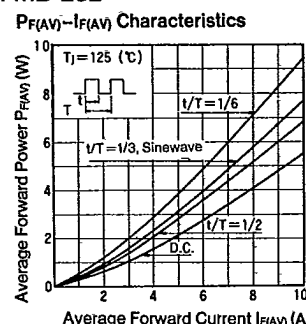
FMB-24H



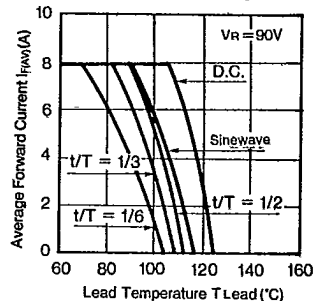
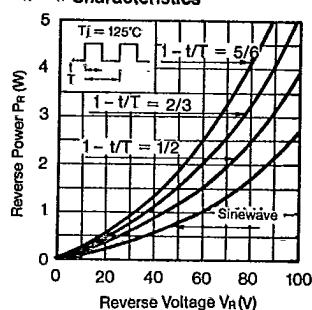
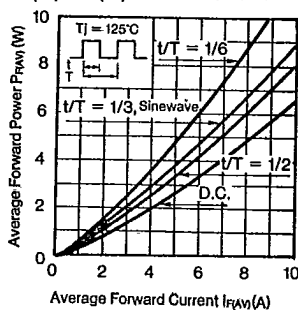
FMB-23L
FMB-24L



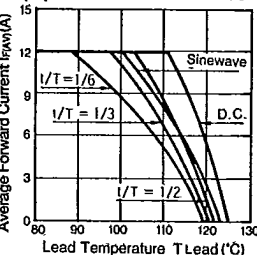
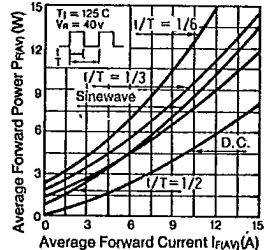
FMB-26L



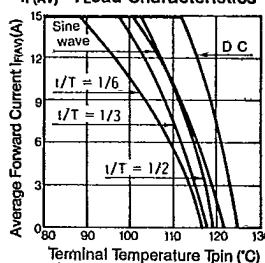
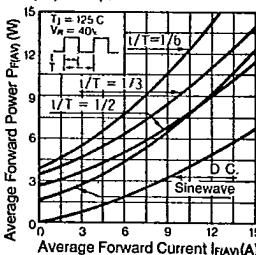
T-23-01



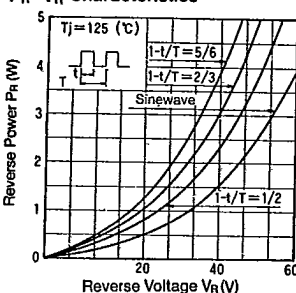
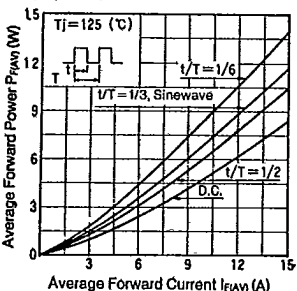
FMB-33S
FMB-34S



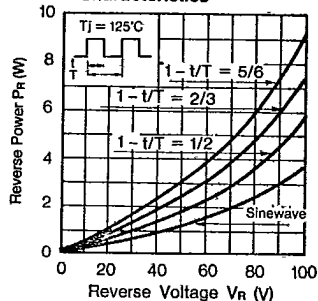
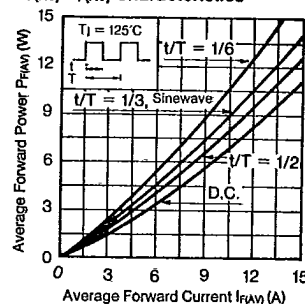
FMB-33
FMB-34



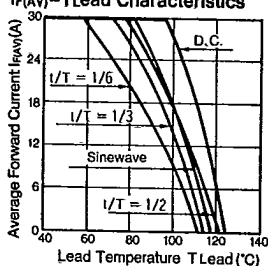
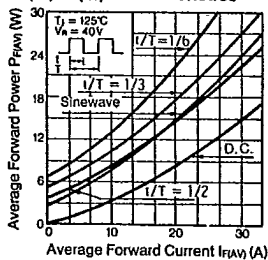
FMB-36



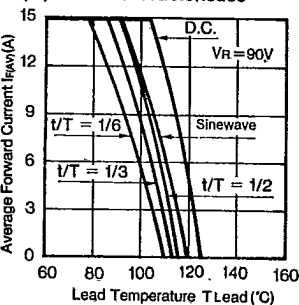
FMB-39



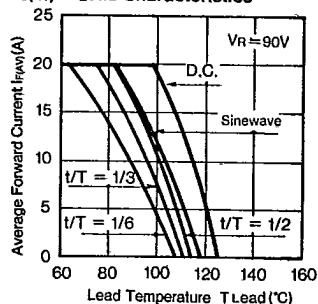
FMB-33M
FMB-34M



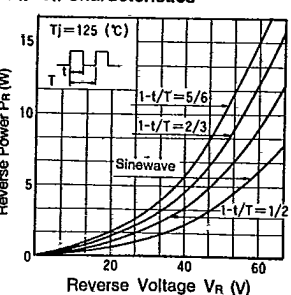
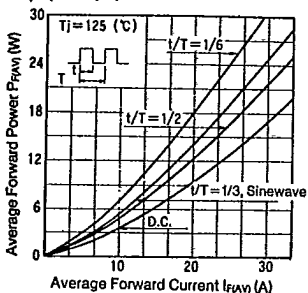
I_{F(AV)}-T_{Lead} Characteristics



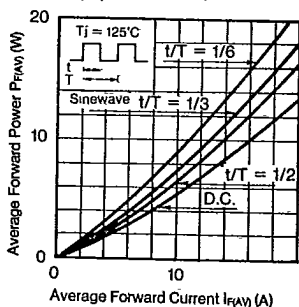
FMB-39M



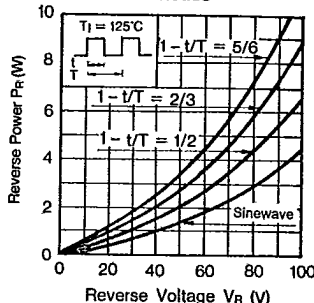
FMB-36M



$P_{F(AV)}-I_{F(AV)}$ Characteristics



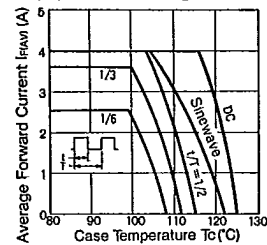
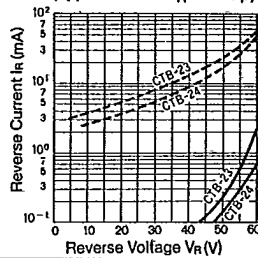
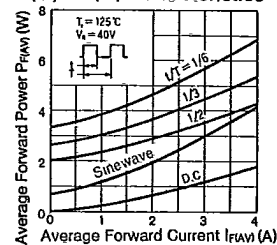
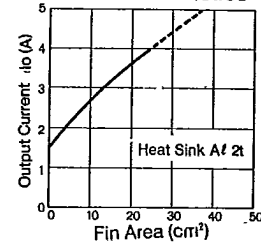
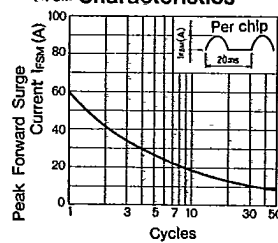
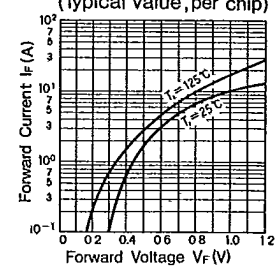
P_R-V_R Characteristics



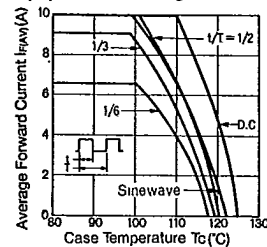
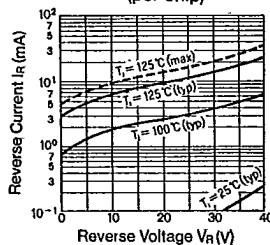
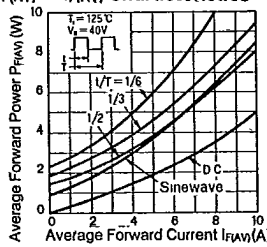
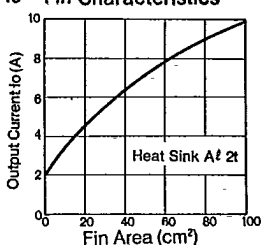
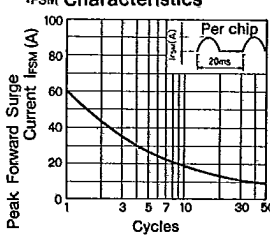
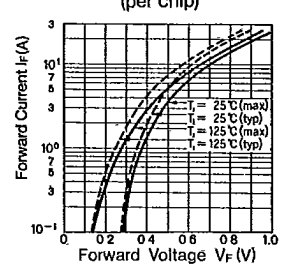
Characteristics

T-23-01

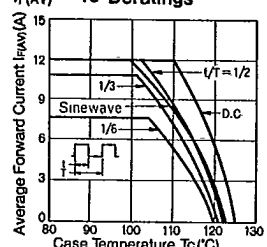
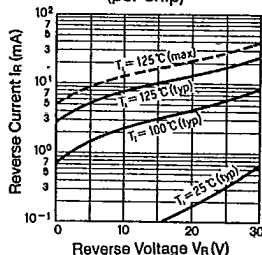
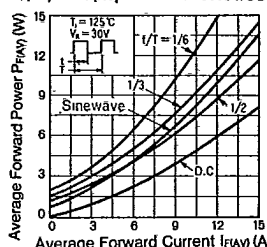
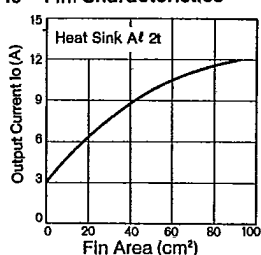
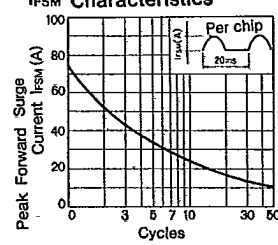
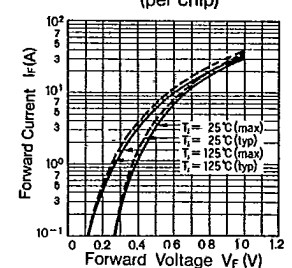
CTB-24

 $I_{F(AV)} - T_c$ Deratings $I_R - V_R$ Characteristics (Typical Value, per chip) $P_{F(AV)} - I_{F(AV)}$ Characteristics $I_o - \text{Fin}$ Characteristics I_{FSM} Characteristics $I_F - V_F$ Characteristics (Typical Value, per chip)

CTB-24L

 $I_{F(AV)} - T_c$ Deratings $I_R - V_R$ Characteristics (per chip) $P_{F(AV)} - I_{F(AV)}$ Characteristics $I_o - \text{Fin}$ Characteristics I_{FSM} Characteristics $I_F - V_F$ Characteristics (per chip)

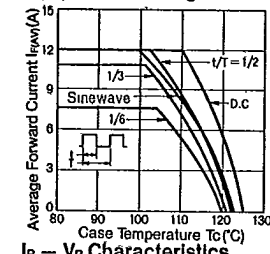
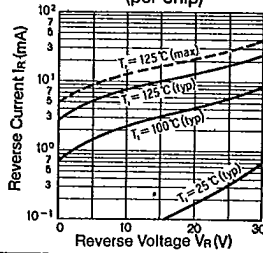
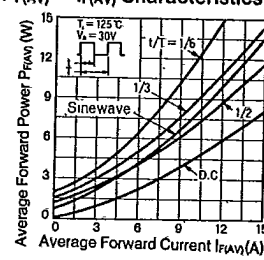
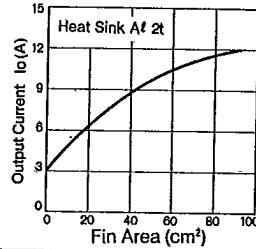
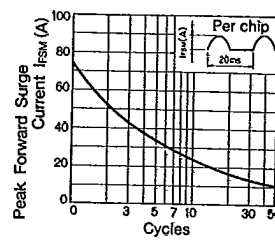
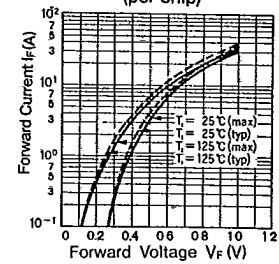
CTB-33S

 $I_{F(AV)} - T_c$ Deratings $I_R - V_R$ Characteristics (per chip) $P_{F(AV)} - I_{F(AV)}$ Characteristics $I_o - \text{Fin}$ Characteristics I_{FSM} Characteristics $I_F - V_F$ Characteristics (per chip)

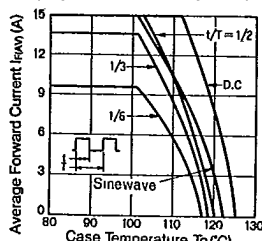
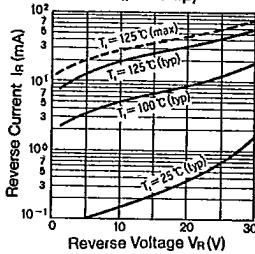
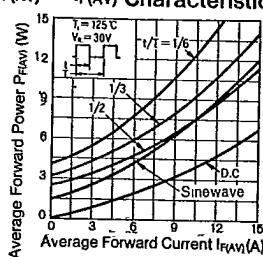
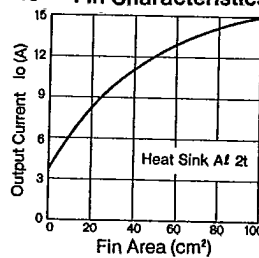
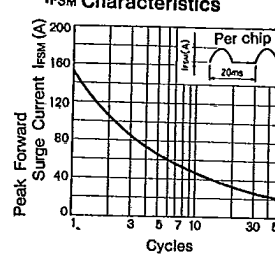
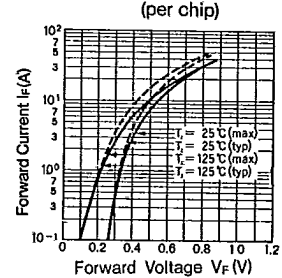
Schottky Barrier Diodes

T-23-01

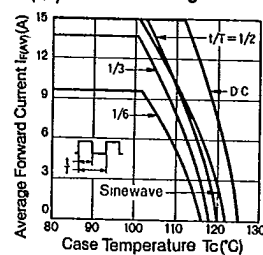
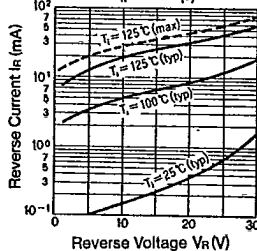
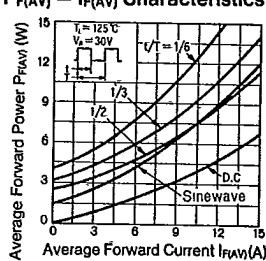
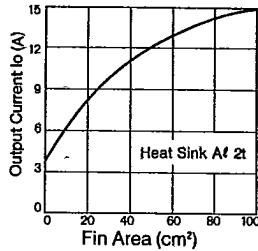
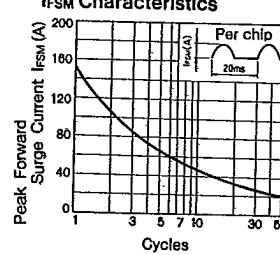
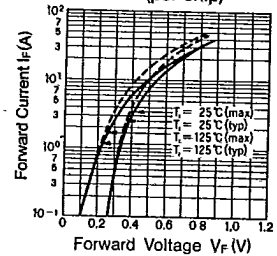
CTB-34S

 $I_F(AV) - T_C$ Deratings $I_R - V_R$ Characteristics (per chip) $P_F(AV) - I_F(AV)$ Characteristics $I_o - \text{Fin}$ Characteristics I_{FSM} Characteristics $I_F - V_F$ Characteristics (per chip)

CTB-33 Series

 $I_F(AV) - T_C$ Deratings $I_R - V_R$ Characteristics (per chip) $P_F(AV) - I_F(AV)$ Characteristics $I_o - \text{Fin}$ Characteristics I_{FSM} Characteristics $I_F - V_F$ Characteristics (per chip)

CTB-34

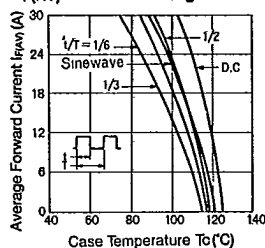
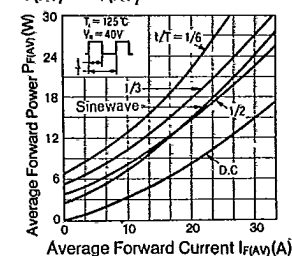
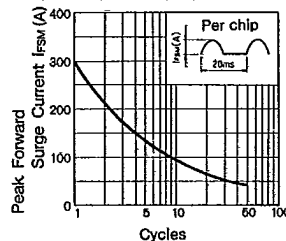
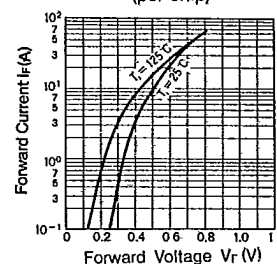
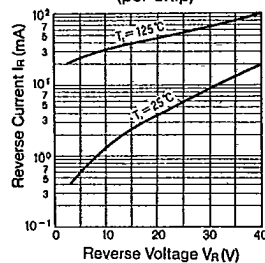
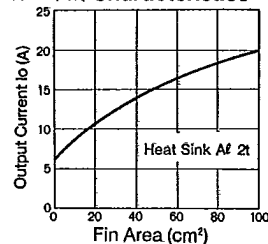
 $I_F(AV) - T_C$ Deratings $I_R - V_R$ Characteristics (per chip) $P_F(AV) - I_F(AV)$ Characteristics $I_o - \text{Fin}$ Characteristics I_{FSM} Characteristics $I_F - V_F$ Characteristics (per chip)

Characteristics

T-23-01

CTB-33M

CTB-34M

 $I_F(AV) - T_C$ Deratings $P_F(AV) - I_F(AV)$ Characteristics I_{FSM} Characteristics $I_F - V_F$ Characteristics (per chip) $I_R - V_R$ Characteristics (per chip) $I_o - Fin$ Characteristics

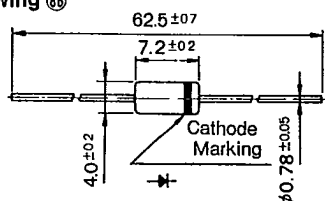
Avalanche Diodes

■ $V_{RM}: 40 \sim 400V$ ■ $I_{ZSM}: 0.1 \sim 3.0A$

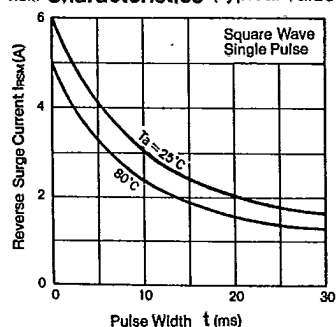
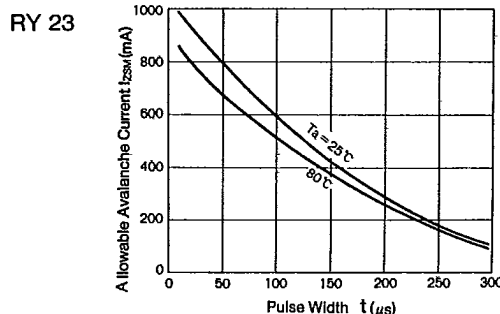
RM/R /RY

Rating/ Characteristics	Absolute Maximum Ratings				Electrical Characteristics (Ta=25°C)						Others			
	VRM (V)	IZSM (A)	Tj (°C)	Tstg (°C)	VZ (V)	IR (μA)	IR(H) (μA)	J (V/°C)	γZ (%/°C)	RZ (Ω)	Outline Drawing	Weight(g)	Taping	Application
Type No.		Square Wave Single Pulse			IZ=1mA Instantaneous	VR=VRM	VR=VRM	IZ=1mA	IZ=1mA	IZ=0.5~ 1.5A				
RM 25	40	3.0	-40~+130		50~61.5	5.0	20 (Ta=80°C)	—	0.09typ.	5 max	Ⓔ	0.44	Available	For Surge Absorption
RM 26	50				60~70									
R 2M	130	1.0(100μs)	-40~+150	135~180	10	50(Ta=100°C)	+0.15typ.	—	—	0.44				
RY 23	200	0.1(100μs)	-40~+130	250~400		50		—	—	0.44				
RY 24	400			400~450		(Ta=80°C)								

Outline Drawing ⑧



⑧ Plastic Molded, Flammability : UL94V-0 or Equivalent

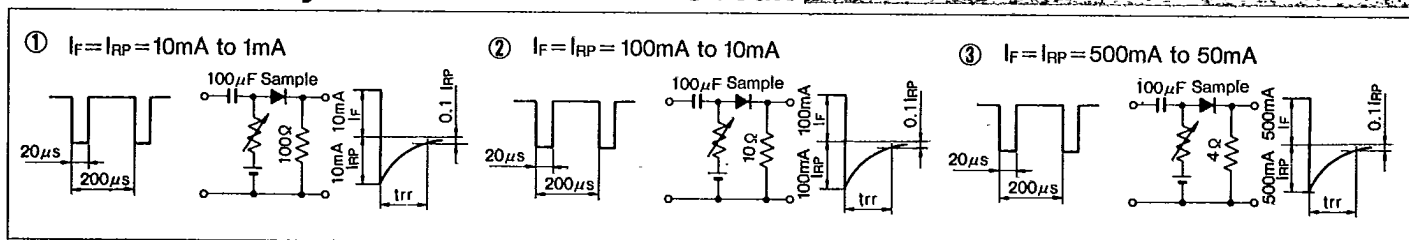
 I_{RSM} Characteristics (Typical Value) I_{ZSM} Characteristics (Typical Value)

Symbols/trr Measurement Circuit

Symbols

V_{RSM}	Peak Reverse Surge Voltage	I_{RSM}	Peak Reverse Surge Current	T_{stg}	Storage Temperature
V_{RM}	Peak Reverse Voltage	I_R	Reverse Current	t_{rr}	Reverse Recovery Time
V_{P-P}	Reverse Voltage (Peak to Peak)	I_{RP}	Peak Reverse Current	C_t	Total Capacitance Between Terminals
V_R	Reverse Voltage	$I_{R(H)}$	Reverse Current (High Temperature)	$R_{th(j-c)}$	Thermal Resistance, Junction to Case
V_F	Forward Voltage	I_Z	Avalanche Current	r_z	Temperature Coefficient of Breakdown Voltage
V_B	Breakdown Voltage	I_{ZSM}	Allowable Avalanche Current	R_z	Equivalent Resistance of Breakdown Region
I_o	Average Rectified Forward Current	T_a	Ambient Temperature	$P_{F(AV)}$	Average Forward Power Dissipation
I_F	Forward Current	T_j	Junction Temperature	I_t^2	I_t^2 limiting Value
$I_{F(AV)}$	Average Forward Current	T_{opr}	Operating Ambient Temperature		
I_{FSM}	Peak Forward Surge Current	T_c	Case Temperature		

Reverse Recovery Time Measurement Circuit



Taping Specifications

Excluding High Voltage Diodes

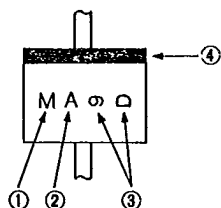
Designation	Dimension (in mm)	Packaging Dimension and Marking	Quantity
V Add Suffix [V] to Type No.	Tape Carrier Method (1) Right side of taping direction is cathode. (2) Place electrode side down when casing. (3) Provide leader tape of 150~200mm at beginning of tape. (4) Provide space of more than 10 pitches each for beginning and end of tape.	Reel	1,800 pcs per reel
V Add Suffix [V] to type No.	Axial Taping	Reel	5,000 pcs per reel (2.7 ϕ body) 3,000 pcs per reel (4.0 ϕ body)

Taping Specifications

Designation	Dimension (in mm)	Packaging Dimension and Marking	Quantity
V1 Add Suffix [V1] to Type No.	Axial Taping 	Ammunition Pack 	2,000 pcs per box (2.7 ϕ body) 1,000 pcs per box (4.0 ϕ body)
VO Add Suffix [VO] to Type No.	Axial Taping 	Ammunition Pack 	2,000 pcs per box (2.7 ϕ body) (2.4 ϕ body)
V3 Add Suffix [V3] to Type No.	Axial Taping 	Reel 	1,500 pcs per reel (5.2 ϕ body)
V4 Add Suffix [V4] to Type No.	Axial Taping 	Ammunition Pack 	1,000 pcs per box (5.2 ϕ body)
W Add Suffix [W] to Type No.	Radial Taping 	Ammunition Pack 	4,000 pcs per box (2.7 ϕ body) (0.6 ϕ lead)
WS Add Suffix [WS] to Type No.	Radial Taping (Applicable to AO Series) 	Ammunition Pack 	2,500 pcs per box (2.4 ϕ body)
WK Add Suffix [WK] to Type No.	Radial Taping (Applicable to AO Series) 		

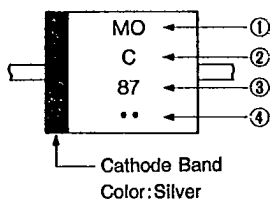
Marking Guide

1 Small TMD



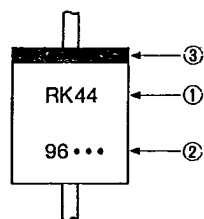
- ① Type Designation (in abbreviation)
AM01 is abbreviated as M.
- ② Class Designation
Z: 200V, No Letter: 400V, A: 600V
- ③ A: Year (Last Number of AD Year)
B: Month (Jan. to Sept. are represented by numbers 1 to 9 respectively, and Oct., Nov., and Dec. are abbreviated as O, N and D respectively)
- ④ Cathode Band: Successive Band, however AU02 Type is Non-Successive Band.

2 E/EO Type TMD



- ① Type Designation (in abbreviation)
EM01 is abbreviated as MO, EM2 is abbreviated as M2.
- ② Class Designation
Z: 200V, No Letter: 400V, A: 600V
B: 800 V, C: 1000V, F: 1500V
However, EU02A to be marked 2A, and EU2YX to be marked Y.
- ③ Abbreviations Representing Production Period
A: Year (Last Number of AD Year)
B: Month (1~9, O, N, D)
- ④ Production Period Divided in 3 ten day terms
• : 1st 10days •• : 2nd 10days ••• : 3rd 10days

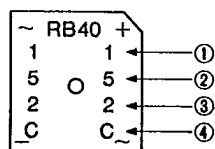
3 R Type TMD



- ① Type Designation: Mark in 2 sets
- ② Production Period: Mark in 4 sets
A: Year (Last Number of AD Year)
B: Month (1~9, O, N, D)
- ③ Production Period Divided in 3 ten day terms
• : 1st 10days •• : 2nd 10days ••• : 3rd 10days
- ④ Cathode Band Color: Silver: For Power Supply
Yellow: For Middle Speed
Red : For High Speed and Ultra-High Speed

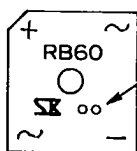
4 RB40/60

(RB40 Series)



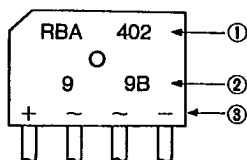
- ① Peak Reverse Voltage Designation
1, 2, 4, 6, C
Production Period
- ② Year (Last Number of AD Year)
- ③ Month (1~9, O, N, D)
- ④ Divided in 3 ten day terms
A: 1st 10days, B: 2nd 10days
C: 3rd 10days
Color Designation: Silver

(RB60 Series)



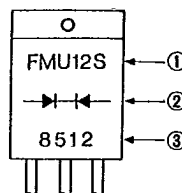
Dot Designation RB601 Violet
RB602 No Color
RB604 Blue
RB606 White

5 RBV/RBA



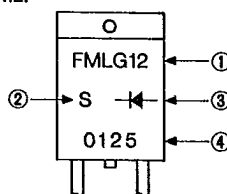
- ① Type Designation
- ② Lot Number
1st : Year (Last Number of AD Year)
2nd: Month (1~9, O, N, D)
3rd : Divided 1~3 ten day Terms
A: 1st 10 days B: 2nd 10 days
C: 3rd 10 days
- ③ In-Put Designation

6 TO220 Type (FM or CT Type)



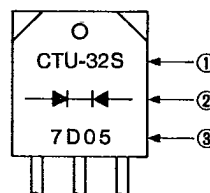
- ① Type Designation
Show FMU-12S as FMU12S.
- ② Polarity: Rectifier Symbols
- ③ Lot Number (Laser Marking)
1st : Year (Last Number of AD Year)
2nd : Month (0~9, O, N, D)
3rd, 4th: Day

7 TO220 Type (FM or CT Type, single chip)



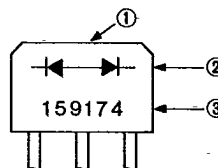
- ① Type Designation: Omit Last Letter
Show FML-G12S as FMLG12.
- ② Last Letter of Type Designation
- ③ Polarity: Rectifier Symbols
- ④ Lot Number (Laser Marking)
1st : Year (Last Number of AD Year)
2nd : Month (0~9, O, N, D)
3rd, 4th: Day

8 TO3P Type (FM or CT Type)



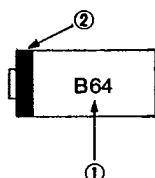
- ① Type shown in full designation
However, CTB-34/34S/34M are marked as CTB-34, CTU-G3DR is marked as CTUG3DR.
- ② Polarity: Rectifier Symbols
- ③ Lot Number:
1) M, U, G and L Types
First Number : Last Digit of AD Year
Second Number : Month
Third and Fourth Numbers: Day
Fifth Number : None
2) For types CTB-34/34S/34M, the fifth letter shows type designation. If no fifth number, the type is CTB-33 or CTB-34.
3) Marking Color: Silver

9 MI-10/15 Type



- ① MI-10/15 is die-stamped on the top of the case.
- ② Rectifier Symbols
- ③ Lot Number:
First Number : Peak Reverse Voltage:
(Letter) 0=50V, 1=100V, 2=200V,
4=400V, 6=600V, C=1000V
Second Number : Last Digit of AD Year
Third Number : Month
Fourth and Fifth Numbers: Day
Sixth Number : Production number and
U: Voltage Doubler Type

10 SFP Type



- ① Type Designation:
SFPB-64 is abbreviated at B64.
- ② Cathode Band