

High Voltage Diodes

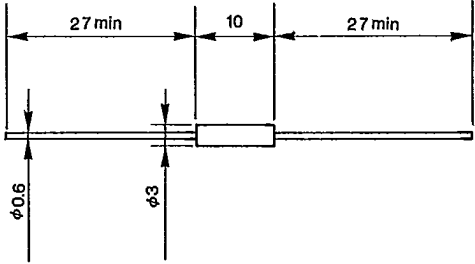
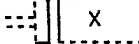
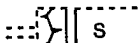
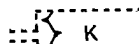
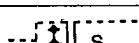
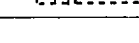
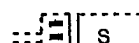
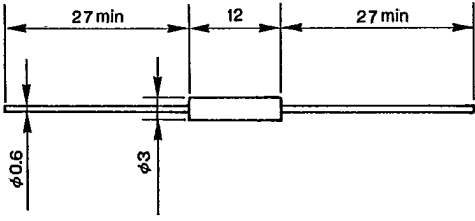
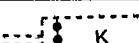
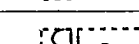
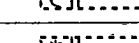
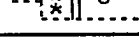
V_{RM}: 2~24kVI_o: 2mA/350mA

SHV/HVR

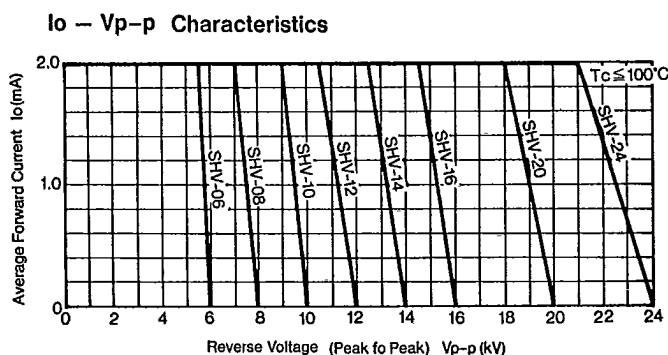
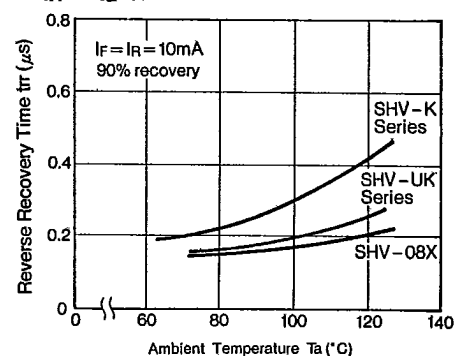
Rating/ Characteristics	Absolute Maximum Ratings						Electrical Characteristics (Ta=25°C)						Others											
	V _{RSM} (kV)	V _{RM} (kV)	I _o (mA)	I _{FSM} (A)	T _c (°C)	T _{stg} (°C)	V _F (V)		I _R (μA)	I _{R(H)} (μA)	t _{rr} (μs)		Outline Drawing	Weight(g)	Taping	Application								
Type No.				50Hz Half Sine Wave Single Pulse			max	I _F (mA)	V _R =V _{RM} max	V _R =V _{RM} Ta=100°Cmax		I _F /I _R (mA)	Ta=100°C											
SHV-02	2.2	2	2 [TV High Voltage CLoad]	0.3	100	-40~ +120	10	1	3	0.18	10/10	—	②5	0.15	Available	For TV High Voltage								
SHV-03	—	3		0.5									②6	0.16										
SHV-06	7	6											②8	0.2										
SHV-08	9	8											②9	0.32										
SHV-10	12	10											③0	0.2										
SHV-12	14	12											③1	0.2										
SHV-14	17	14											③2	0.2										
SHV-16	19	16											③3	0.2										
SHV-20	24	20											③4	0.2										
SHV-24	27	24											③5	0.2										
SHV-06NK	7	6											③6	0.2										
SHV-08NK	9	8											③7	0.2										
SHV-10K	12	10											③8	0.2										
SHV-12K	14	12											③9	0.2										
SHV-06UNK	7	6											④0	0.2										
SHV-08UNK	9	8											④1	0.2										
SHV-10UK	12	10											④2	0.2										
SHV-12UK	14	12											④3	0.2										
SHV-16UK	19	16											④4	0.2										
SHV-08X	9	8	2										④5	0.2										
HVR-1X-40B	—	9	350	20	60(Ta)	-40~+130	9	350	10	V _B =9.5KVmin, 15KVmax		—	④6	3.67	—	For MWO								

Type No.	Outline Drawing	Marking	
		Marking Pattern	Marking Color
SHV-02	Outline Drawing ②5 		White
			Red
SHV-03	Outline Drawing ②6 		White
SHV-06NK	Outline Drawing ②7 		White
SHV-06UNK			Red
SHV-08NK			White
SHV-08UNK			Red
SHV-06	Outline Drawing ②8 		White
SHV-08			

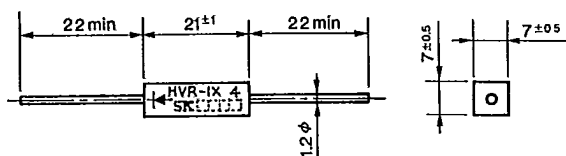
For TV/Microwave Oven

Type No.	Outline Drawing	Marking	
		Marking Pattern	Marking Color
SHV-08X	Outline Drawing ②⑨ 	 X	Red
SHV-10		 S	White
SHV-10K		 K	
SHV-10UK		 S	Red
SHV-12		 S	White
SHV-12K		 K	
SHV-12UK		 S	Red
SHV-14	Outline Drawing ③⑩ 	 S	White
SHV-16		 K	Red
SHV-16UK		 S	White
SHV-20		 S	
SHV-24		 S	

SHV Series

**trr - ta Characteristics**

Outline Drawing ③⑪



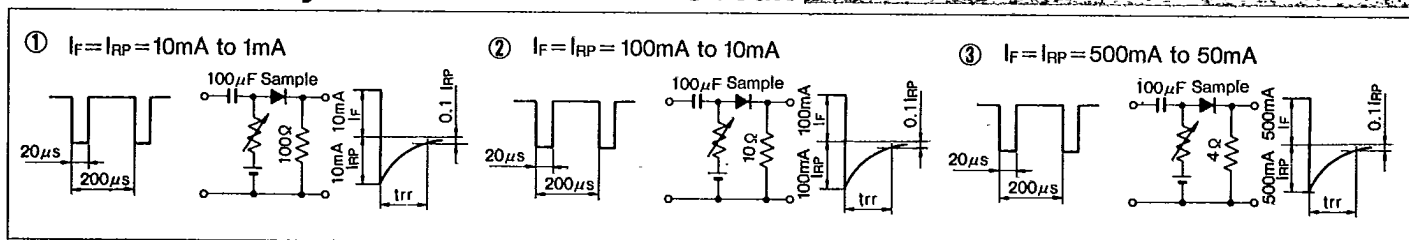
②⑤~③⑪ Plastic Molded, Flammability: UL94V-0 or Equivalent

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

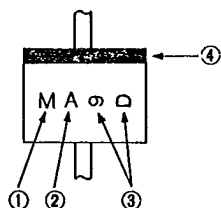
Designation	Dimension (in mm)	Packaging Dimension and Marking	Quantity
V Add Suffix [V] to Type No.	Tape Carrier Method (1) Right side of taping direction is cathode. (2) Place electrode side down when casing. (3) Provide leader tape of 150~200mm at beginning of tape. (4) Provide space of more than 10 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) 		

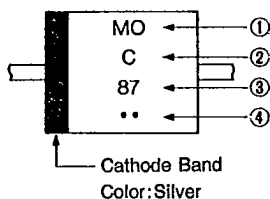
Marking Guide

1 Small TMD



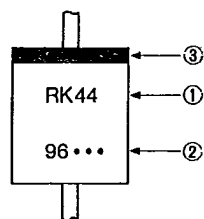
- ① Type Designation (in abbreviation)
AM01 is abbreviated as M.
- ② Class Designation
Z: 200V, No Letter: 400V, A: 600V
- ③ A: Year (Last Number of AD Year)
B: Month (Jan. to Sept. are represented by numbers 1 to 9 respectively, and Oct., Nov., and Dec. are abbreviated as O, N and D respectively)
-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

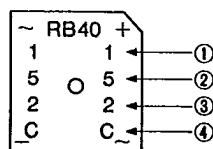
3 R Type TMD



- 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

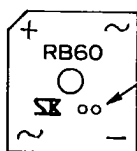
4 RB40/60

(RB40 Series)



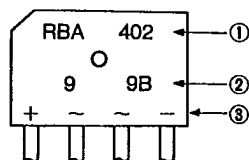
- ① Peak Reverse Voltage Designation
1, 2, 4, 6, C
Production Period
- ② Year (Last Number of AD Year)
- ③ Month (1~9, O, N, D)
- ④ Divided in 3 ten day terms
A: 1st 10days, B: 2nd 10days
C: 3rd 10days
Color Designation: Silver

(RB60 Series)



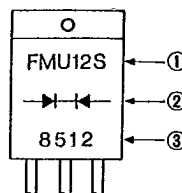
Dot Designation RB601 Violet
RB602 No Color
RB604 Blue
RB606 White

5 RBV/RBA



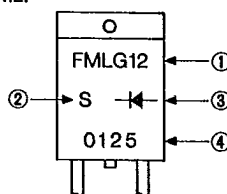
- ① Type Designation
- ② Lot Number
1st : Year (Last Number of AD Year)
2nd: Month (1~9, O, N, D)
3rd : Divided 1~3 ten day Terms
A: 1st 10 days B: 2nd 10 days
C: 3rd 10 days
- ③ In-Put Designation

6 TO220 Type (FM or CT Type)



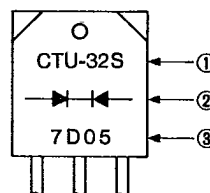
- ① Type Designation
Show FMU-12S as FMU12S.
- ② Polarity: Rectifier Symbols
- ③ Lot Number (Laser Marking)
1st : Year (Last Number of AD Year)
2nd : Month (0~9, O, N, D)
3rd, 4th: Day

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



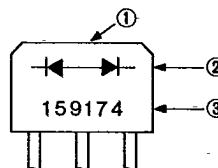
- ① Type Designation: Omit Last Letter
Show FML-G12S as FMLG12.
- ② Last Letter of Type Designation
- ③ Polarity: Rectifier Symbols
- ④ Lot Number (Laser Marking)
1st : Year (Last Number of AD Year)
2nd : Month (0~9, O, N, D)
3rd, 4th: Day

8 TO3P Type (FM or CT Type)



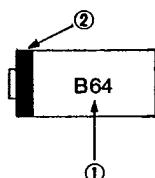
- ① Type shown in full designation
However, CTB-34/34S/34M are marked as CTB-34, CTU-G3DR is marked as CTUG3DR.
- ② Polarity: Rectifier Symbols
- ③ Lot Number:
1) M, U, G and L Types
First Number : Last Digit of AD Year
Second Number : Month
Third and Fourth Numbers: Day
Fifth Number : None
2) For types 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