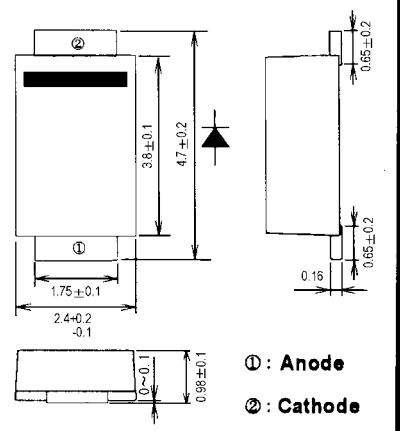
TOSHIBA Schottky Barrier Rectifier Schottky Barrier Type

C M S 0 9

Switching Mode Power Supply Applications
Portable Equipment Battery Applications

- Forward Voltage: V_{FM} = 0.45 V (max)
- Average Forward Current: $I_{F\ (AV)}$ = 1.0 A
- Repetitive Peak Reverse Voltage: V_{RRM} = 30 V
- Small&Thin Package: "M-FLAT™" (Toshiba package name)

Unit in mm



JEDEC	—
EIAJ	—
TOSHIBA	3-4E1A

Weight: 0.023 g

Maximum Ratings

Characteristics	Symbol	Rating	Unit
Repetitive peak reverse voltage	V_{RRM}	30	V
Average forward current (Note)	$I_{F\ (AV)}$	1.0 (Ta = 51°C)	A
Peak one cycle surge forward current (non-repetitive)	I_{FSM}	25 (50 Hz)	A
Junction temperature	T_j	−40~150	°C
Storage temperature	T_{stg}	−40~150	°C

Note: Glass-epoxy Substrate
(substrate size: 50 mm × 50 mm soldering land: 6 mm × 6 mm)

Electrical Characteristics (Ta = 25°C)

Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Peak forward voltage	$V_{FM\ (1)}$	I_{FM} = 0.1 A	—	0.32	—	V
	$V_{FM\ (2)}$	I_{FM} = 0.5 A	—	0.37	—	
	$V_{FM\ (3)}$	I_{FM} = 1.0 A	—	0.40	0.45	
Repetitive peak reverse current	I_{RRM}	V_{RRM} = 5 V	—	1.5	—	μA
	I_{RRM}	V_{RRM} = 30 V	—	15.0	500	
Junction capacitance	C_j	V_R = 10 V, f = 1.0 MHz	—	70	—	pF
Thermal resistance	$R_{th\ (j\text{-}a)}$	On ceramic substrate (soldering land 2 mm × 2 mm)	—	—	60	°C/W
		On glass-epoxy substrate (soldering land 6 mm × 6 mm)	—	—	135	
Thermal resistance	$R_{th\ (j\text{-}\ell)}$	—	—	—	16	°C/W

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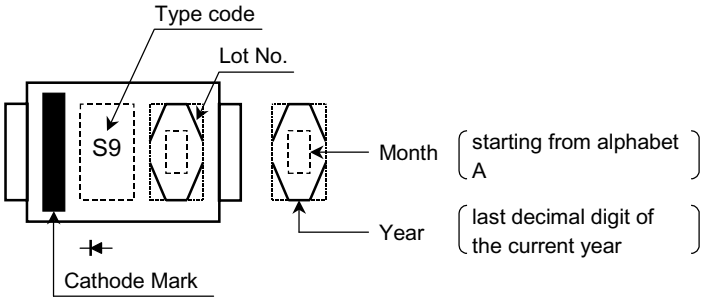
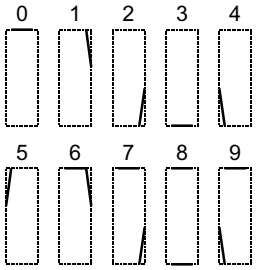
Marking

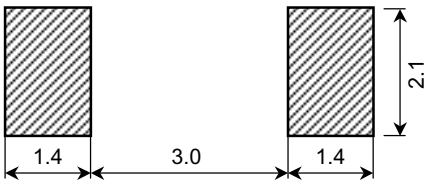


Following Indicates the Data of Manufacture



Standard Soldering Pad

Unit: mm

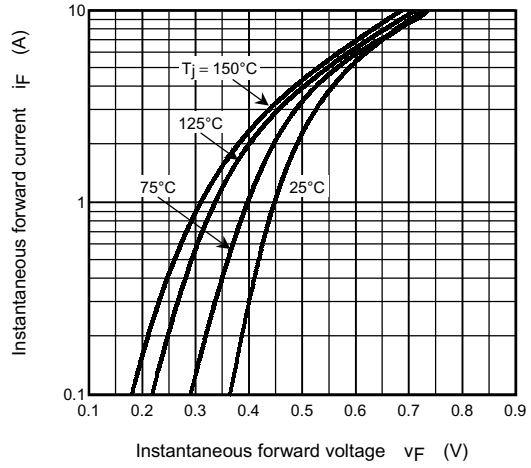


Handling Precaution

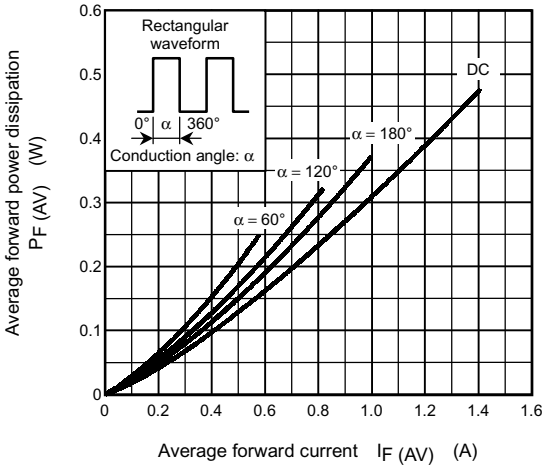
Schottky barrier diodes are having large-reverse-current-leakage characteristic compare to the other rectifier products. This current leakage and not proper operating temperature or voltage may cause thermal runaway.

Please take forward and reverse loss into consideration when you design.

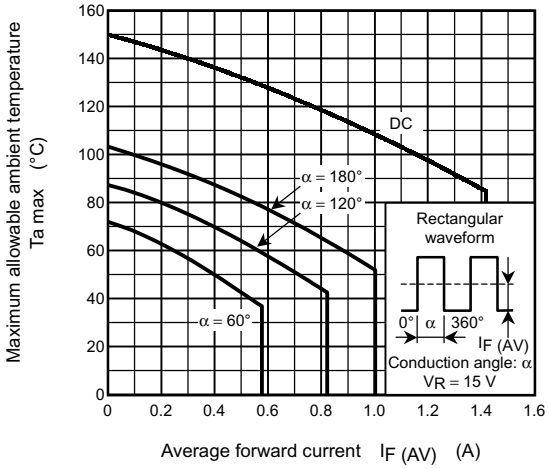
$i_F - v_F$



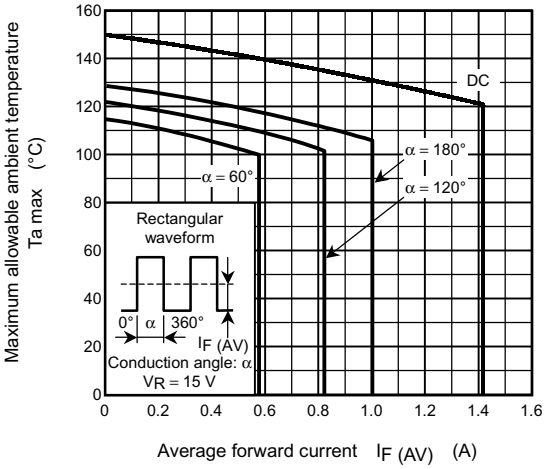
$P_{F\ (AV)} - I_{F\ (AV)}$



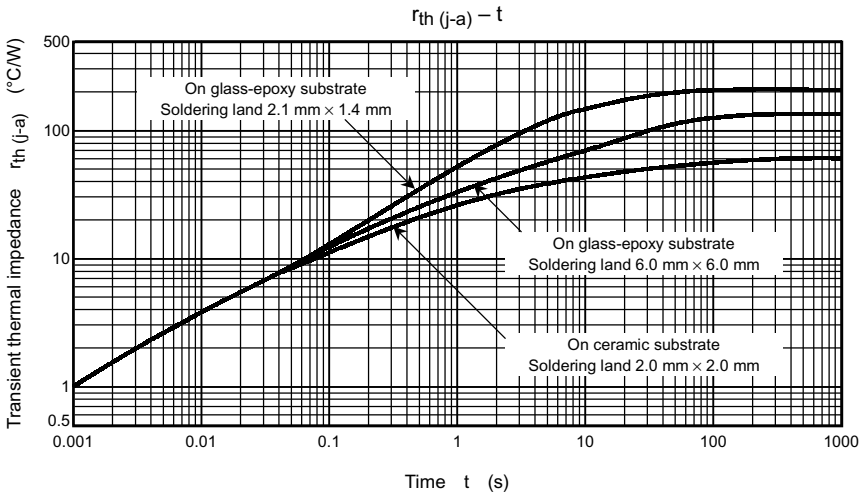
Ta max – $I_{F\ (AV)}$
On Glass-epoxy substrate
(size: 50 mm × 50 mm, land size 6 mm × 6 mm)



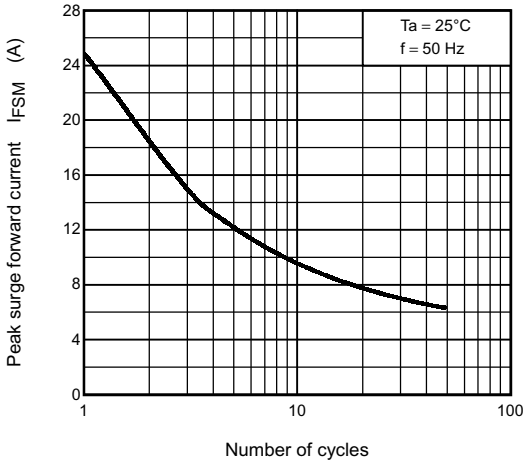
Ta max – $I_{F\ (AV)}$
On Ceramic substrate (size: 50 mm × 50 mm)



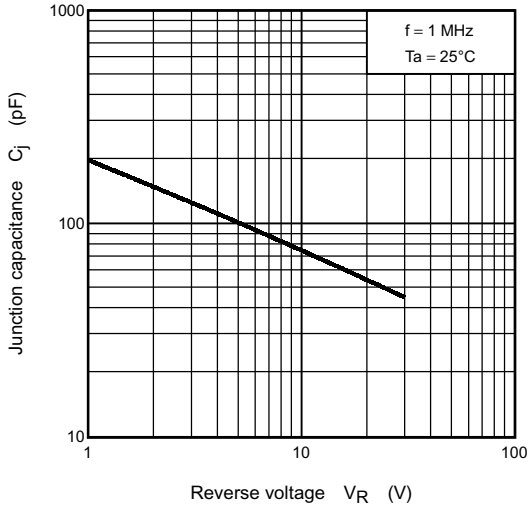
$r_{th\ (j\text{-}a)} - t$



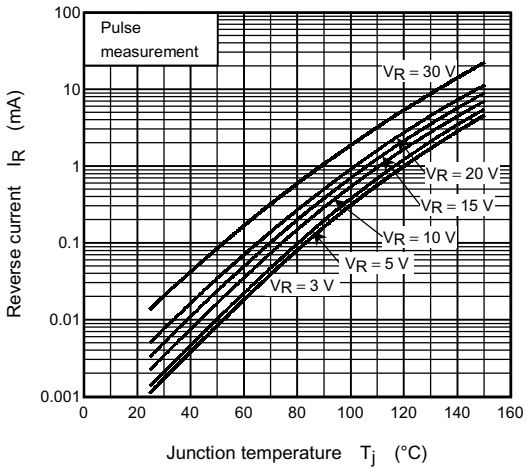
Surge forward current (non-repetitive)



$C_j - V_R$ (typ.)



$I_R - T_j$ (typ.)



$P_{R\ (AV)} - V_R$ (typ.)