TOSHIBA Schottky Barrier Rectifier Schottky Barrier Type

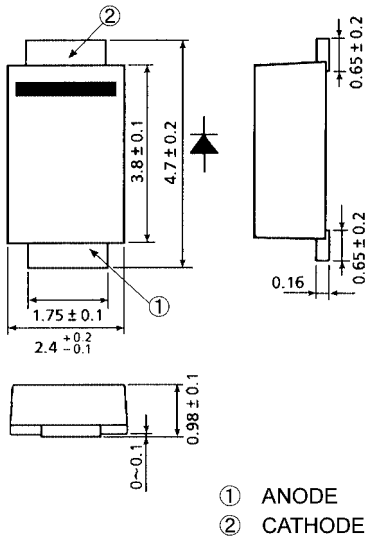
CMS07

Switching Mode Power Supply Applications

Portable Equipment Battery Applications

- Forward voltage: V_{FM} = 0.45 V (max)
- Average forward current: $I_{F\ (AV)}$ = 2.0 A
- Repetitive peak reverse voltage: V_{RRM} = 30 V
- Suitable for compact assembly due to small surface-mount package "M−FLAT™" (Toshiba package name)

Unit: mm



JEDEC	—
JEITA	—
TOSHIBA	3-4E1A

Weight: 0.023 g (typ.)

Maximum Ratings (Ta = 25°C)

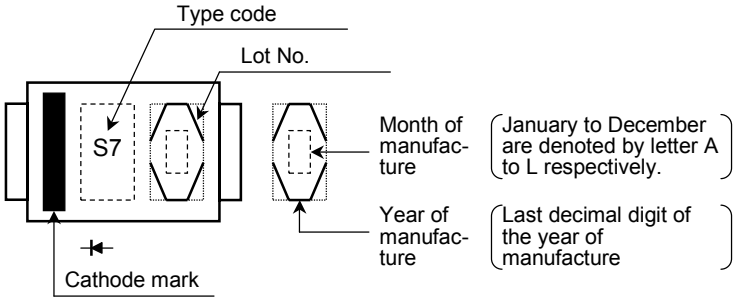
Characteristics	Symbol	Rating	Unit
Repetitive peak reverse voltage	V_{RRM}	30	V
Average forward current	$I_{F\ (AV)}$ (Note)	2.0 (Ta = 60°C)	A
	$I_{F\ (AV)}$	2.0 (Tℓ = 126°C)	
Peak one cycle surge forward current (non-repetitive)	I_{FSM}	40 (50 Hz)	A
Junction temperature	T_j	−40~150	°C
Storage temperature	T_{stg}	−40~150	°C

Note: Device mounted on a ceramic board (board size: 50 mm × 50 mm, soldering land: 2 mm × 2 mm)

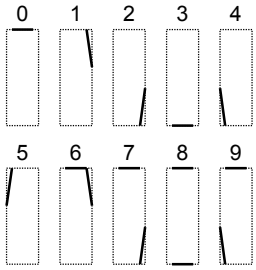
Electrical Characteristics (Ta = 25°C)

Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Peak forward voltage	$V_{FM\ (1)}$	I_{FM} = 0.5 A	—	0.35	—	V
	$V_{FM\ (2)}$	I_{FM} = 1.0 A		0.38	—	
	$V_{FM\ (3)}$	I_{FM} = 2.0 A	—	0.41	0.45	
Repetitive peak reverse current	I_{RRM}	V_{RRM} = 5 V	—	3.0	—	μA
	I_{RRM}	V_{RRM} = 30 V	—	30.0	500	
Junction capacitance	C_j	V_R = 10 V, f = 1.0 MHz	—	130	—	pF
Thermal resistance	$R_{th\ (j\text{-}a)}$	Device mounted on a ceramic board (soldering land: 2 mm × 2 mm)	—	—	60	°C/W
		Device mounted on a glass-epoxy board (soldering land: 6 mm × 6 mm)	—	—	135	
Thermal resistance	$R_{th\ (j\text{-}\ell)}$	—	—	—	16	°C/W

Marking

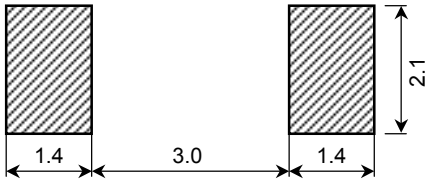


Following Indicates the Data of Manufacture



Standard Soldering Pad

Unit: mm

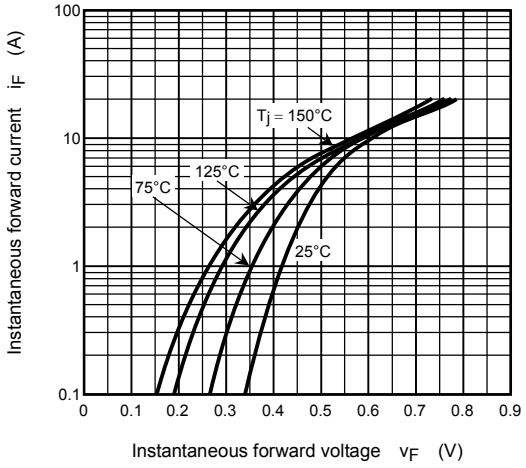


Handling Precaution

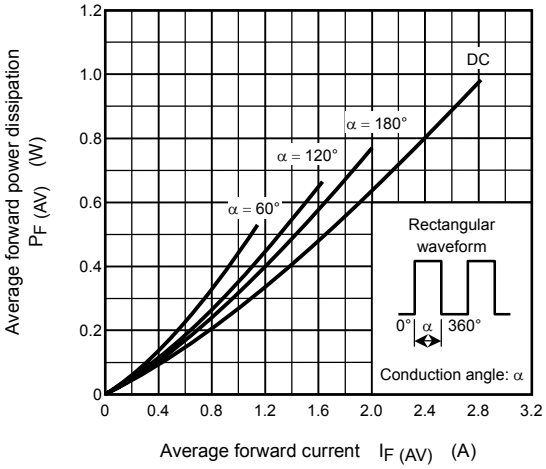
Schottky barrier diodes are having large-reverse-current-leakage characteristic compare to the other rectifier products. This current leakage and improper operating temperature or voltage may cause thermal runaway.

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

$i_F - v_F$

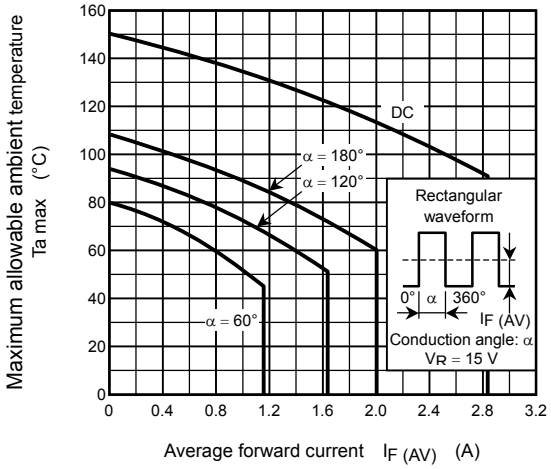


$P_{F\ (AV)} - I_{F\ (AV)}$

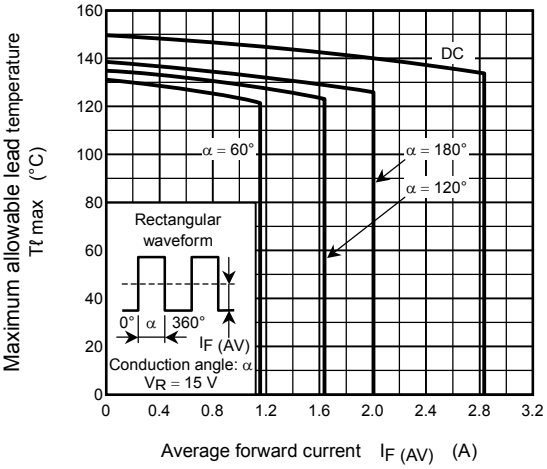


Ta max – $I_{F\ (AV)}$

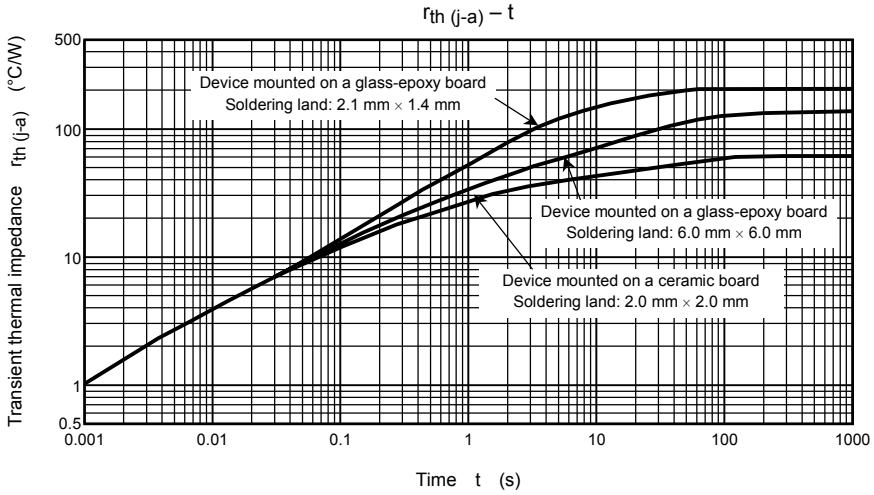
Device mounted on a ceramic board
(board size: 50 mm × 50 mm)



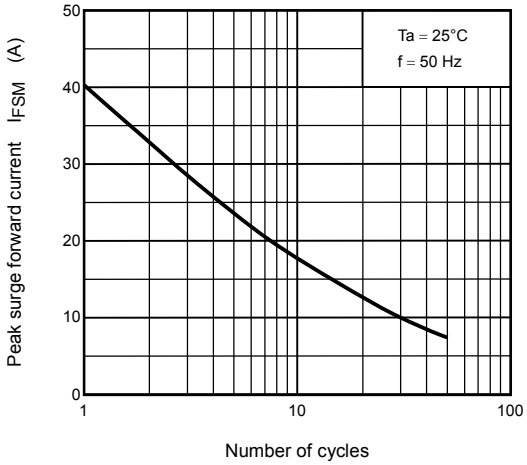
$T\ell$ max – $I_{F\ (AV)}$



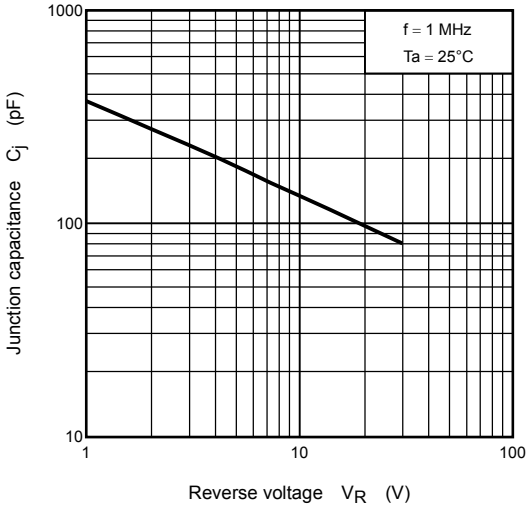
$r_{th\ (j\text{-}a)} - t$



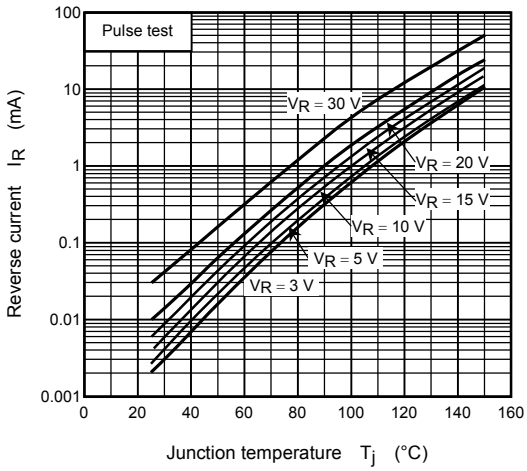
Surge forward current (non-repetitive)



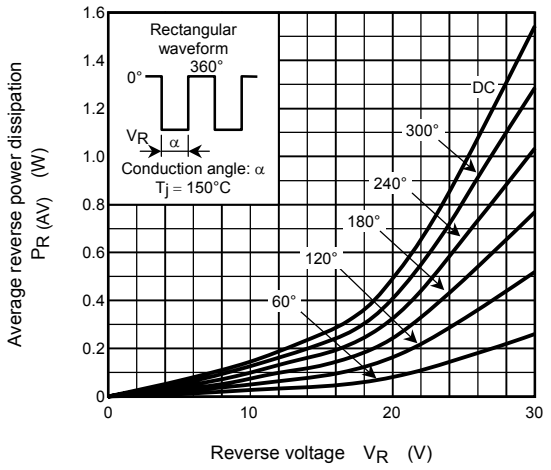
$C_j - V_R$ (typ.)



$I_R - T_j$ (typ.)



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



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