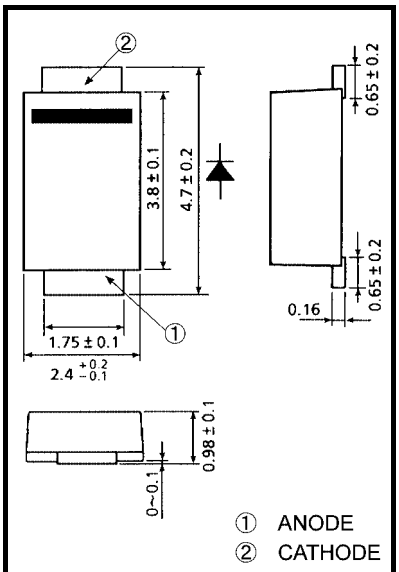
TOSHIBA RECTIFIER SILICON DIFFUSED TYPE

CMC01

For Strobe Discharge Circuit

Unit: mm

- Repetitive peak reverse voltage: V_{RRM} = 400 V
- Average forward current: $I_{F\ (AV)}$ = 1.0 A
- Repetitive peak forward current: I_{FRM} = 150 A (NOTE2)
- Suitable for compact assembly due to small surface-mount package "M−FLAT™" (Toshiba package name)



JEDEC	—
JEITA	—
TOSHIBA	3-4E1A

Weight: 0.023 g (typ.)

Maximum Ratings (Ta = 25°C)

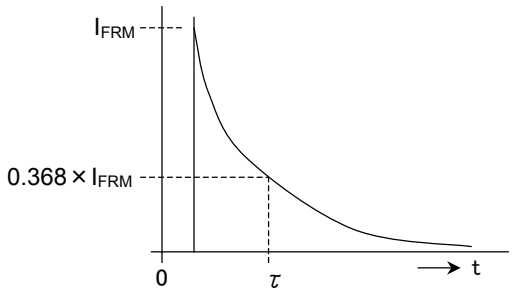
Characteristics	Symbol	Rating	Unit
Repetitive peak reverse voltage	V_{RRM}	400	V
Average forward current (NOTE1)	$I_{F\ (AV)}$	1.0(Ta=47°C)	A
Peak one cycle surge forward current (non-repetitive)	I_{FSM}	30 (50 Hz)	A
Repetitive peak forward current (NOTE2)	I_{FRM}	150	A
Junction temperature	T_j	-40～150	°C
Storage temperature	T_{stg}	-40～150	°C

NOTE1: Device mounted on a glass-epoxy board
board size: 50 mm × 50 mm
soldering land: 6 mm ×6 mm
glass-epoxy board thickness 1.6t

Electrical Characteristics (Ta = 25°C)

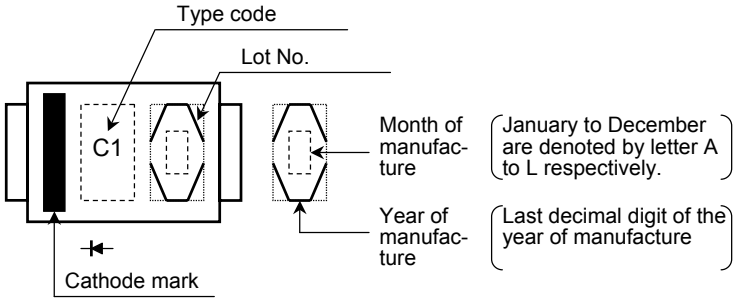
Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Peak forward voltage	V_{FM}	I_{FM} = 1.0 A (Pulse test)	—	0.86	1.0	V
Repetitive peak reverse current	I_{RRM}	V_{RRM} = 400 V (Pulse test)	—	—	10	μA
Thermal resistance	$R_{th\ (j-a)}$	Device mounted on a ceramic board Board size: 50 mm × 50 mm Soldering land: 2 mm × 2 mm Seramic board thickness: 0.64t	—	—	60	°C/W
		Device mounted on a glass-epoxy board Board size: 50 mm × 50 mm Soldering land: 6 mm × 6 mm glass-epoxy board thickness: 1.6t	—	—	110	
		Device mounted on a glass-epoxy board Board size: 50 mm × 50 mm Soldering land: 2.1 mm ×1.4 mm glass-epoxy board thickness: 1.6t	—	—	180	
	$R_{th\ (j-\ell)}$	—	—	—	16	°C/W

NOTE 2 Repetitive peak forward current waveform

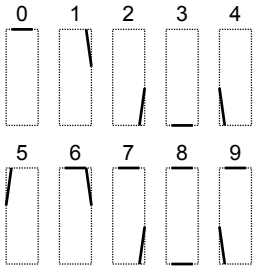


τ =1ms
1cycle/4s

Marking

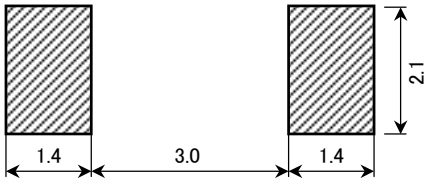


Following Indicates the Year of Manufacture



Standard Soldering Pad

Unit: mm



Precautions when Using Device

The maximum ratings mean the absolute maximum ratings, which are rated values and must not be exceeded during operation, even for an instant. The followings are the general derating method that we recommend when you design a circuit with a device.

VRRM: We recommend that the worst case voltage, including surge voltage, be no greater than 80% of the maximum rating of VRRM for a DC circuit and be no greater than 50% of that of VRRM for an AC circuit.
VRRM has a temperature coefficient (0.1%/℃). Please consider this temperature coefficient when you design a device at low temperature.

IF(AV): We recommend that the worst case current be no greater than 80% of the maximum rating of IF(AV). Please do the sufficient heat design. If you can't design a circuit with excellent heat radiation, please set a margin by using an allowable Tamax-IF (AV) curve.

This rating is only applied for a strobe flash circuit. We recommend that the worst case current be controlled less than the maximum rating of IFRM. The total number of repetitive currents must be less than 5000 times within device's lifespan.

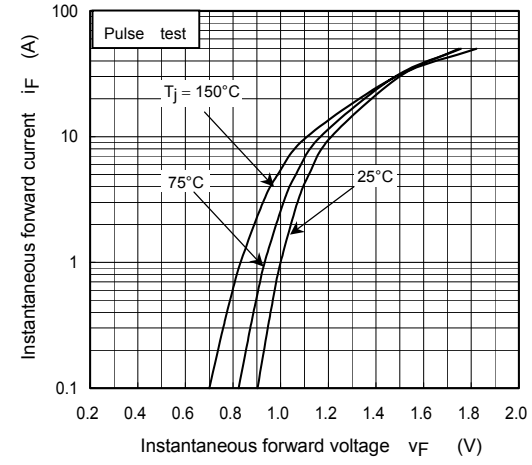
This rating specifies the non-repetitive peak current in one cycle of a 50-Hz sine wave, condition angle 180° . Therefore, this is only applied for an abnormal operation, which seldom occurs during device's lifespan.

We recommend that a device be used Tj of below 120℃ under the worst load and heat radiation conditions.

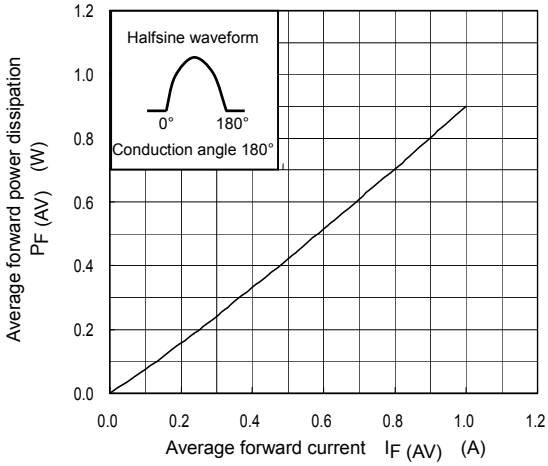
Thermal resistance between junction and ambient fluctuates depending on device's mounting condition. When using a device, please design a circuit board and a soldering land size to match the appropriate thermal resistance value.

Please refer to Rectifier databook for further information.

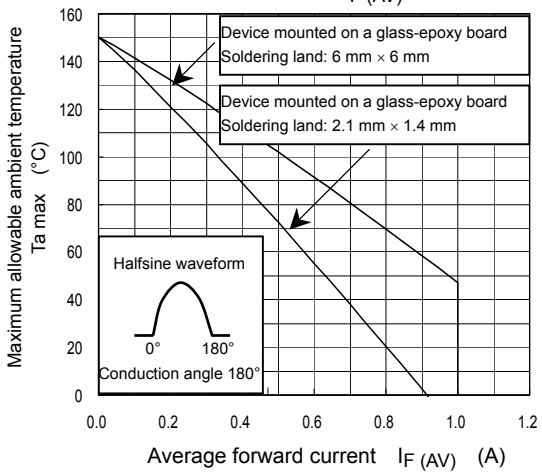
$i_F - v_F$



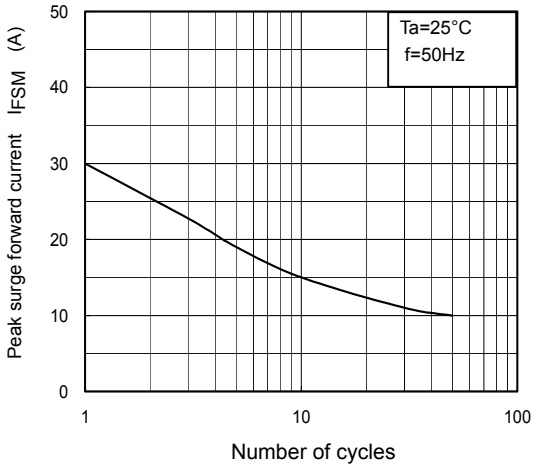
$P_{F\ (AV)} - I_{F\ (AV)}$



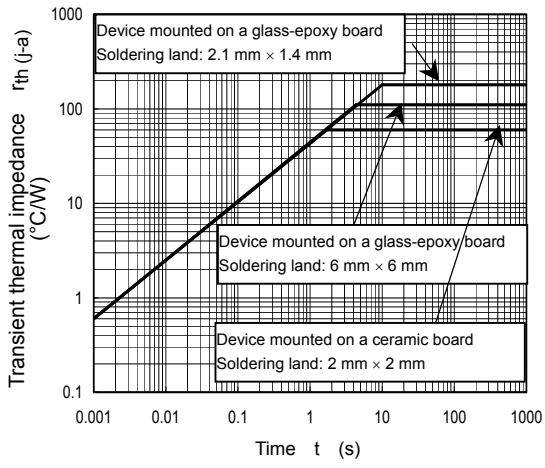
Ta max – $I_{F\ (AV)}$



Surge forward current (non-repetitive)



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



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