

TOSHIBA Rectifier Silicon Diffused Type

CRG07

General Power Supply Rectification

- Average forward current : $I_{F(AV)} = 0.7 \text{ A}$
- Repetitive peak reverse voltage : $V_{RRM} = 400 \text{ V}$
- Small, thin package suitable for high-density board assembly
Toshiba Nickname: S-FLAT™

Absolute Maximum Ratings (Ta = 25°C)

Characteristics	Symbol	Rating	Unit
Repetitive peak reverse voltage	V_{RRM}	400	V
Average forward current (Note 1)	$I_{F(AV)}$	0.7	A
Non-repetitive peak forward surge current (50 Hz)	I_{FSM}	15	A
Junction temperature (Note 2)	T_j	175	°C
Storage temperature (Note 2)	T_{stg}	-55 to 175	°C

Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) are within the absolute maximum ratings.

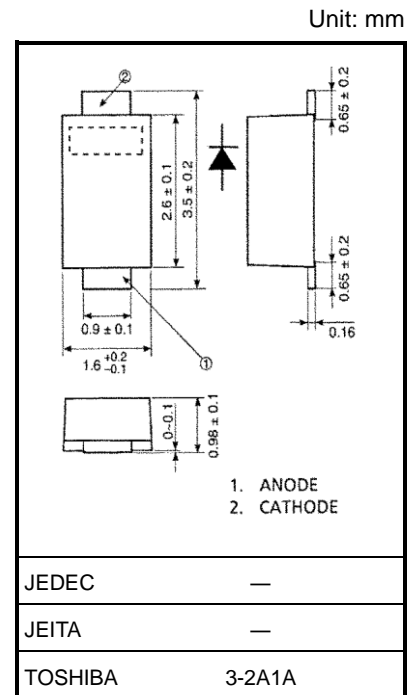
Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook ("Handling Precautions"/"Derating Concept and Methods") and individual reliability data (i.e. reliability test report and estimated failure rate, etc).

Note 1 : Ta = 111°C Device mounted on a ceramic board
 Board size : 50 mm × 50 mm
 Soldering size : 2 mm × 2 mm
 Board thickness : 0.64 mm
 Half Sine Waveform Conduction angle 180°

Note 2: The definitions of maximum rating condition for both junction temperature and storage temperature range are referred from AEC-Q101.

Electrical Characteristics (Ta = 25°C)

Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Peak forward voltage	$V_{FM} (1)$	$I_{FM} = 0.1 \text{ A}$ (pulse test)	—	0.88	—	V
	$V_{FM} (2)$	$I_{FM} = 0.7 \text{ A}$ (pulse test)	—	1.0	1.1	
	$V_{FM} (3)$	$I_{FM} = 1 \text{ A}$ (pulse test)	—	1.1	—	
Repetitive peak reverse current	I_{RRM}	$V_{RRM} = 400 \text{ V}$ (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) (board thickness: 0.64 mm)	—	—	65	°C/W
		Device mounted on a glass-epoxy board (board size: 50 mm × 50 mm) (soldering land: 6 mm × 6 mm) (board thickness: 1.6 mm)	—	—	130	

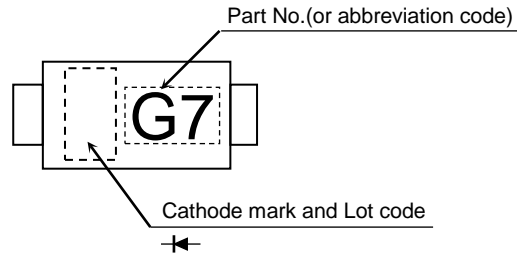


Weight: 0.013 g (typ.)

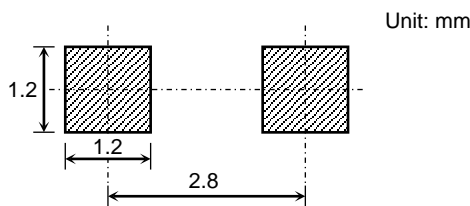
Start of commercial production
2007-02

Marking

Abbreviation Code	Part No.
G7	CRG07



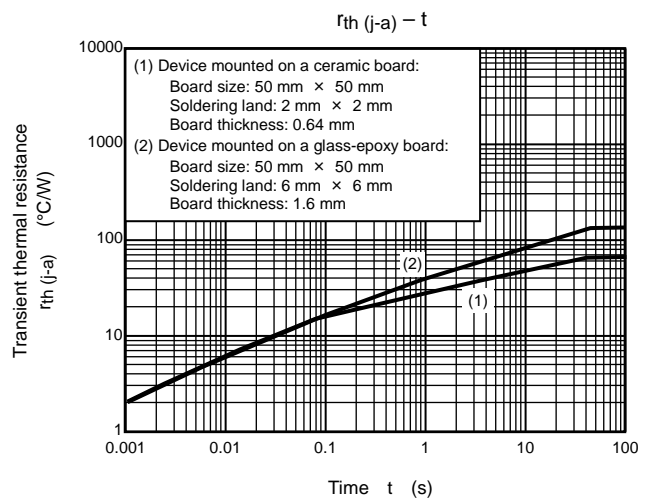
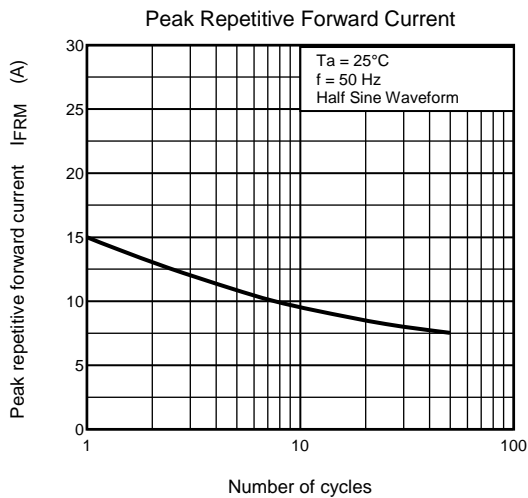
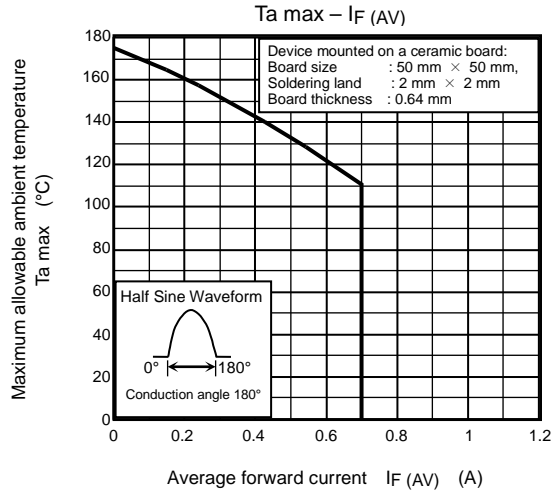
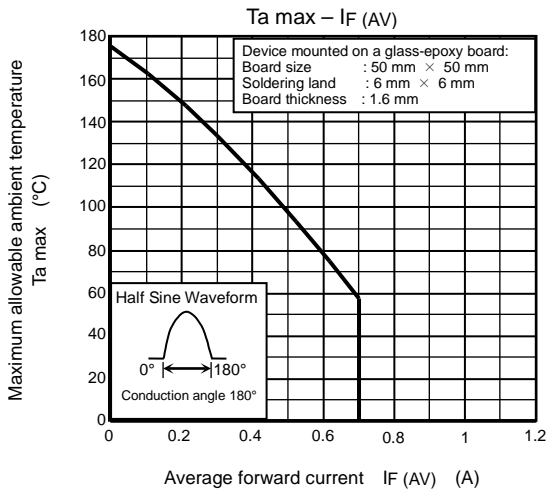
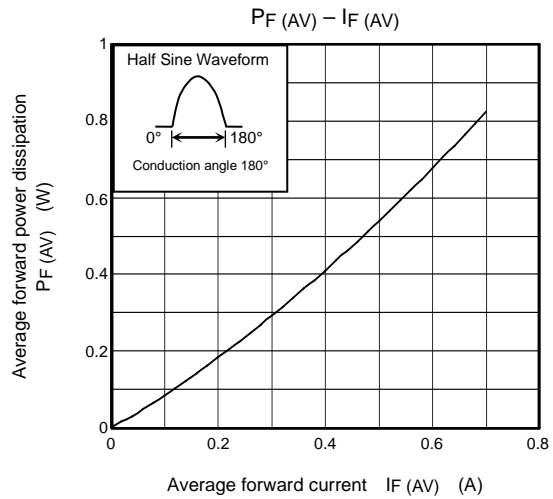
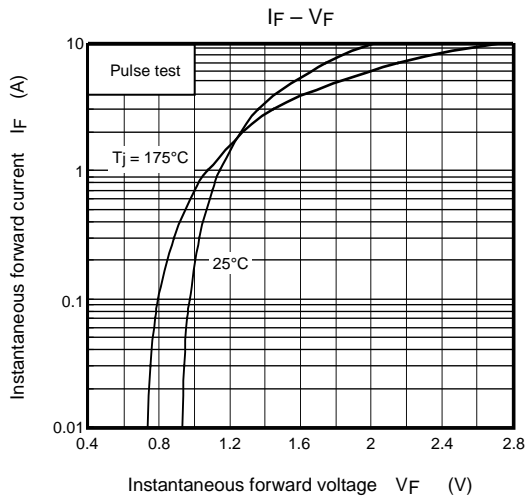
Land Pattern Dimensions (for reference only)



Handling Precaution

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

 - VRRM: Use this rating with reference to the above. VRRM has a temperature coefficient of 0.1%/°C. Take this temperature coefficient into account designing a device at low temperature.
 - IF(AV): We recommend that the worst case current be no greater than 80% of the absolute maximum rating of IF(AV) and T_j be below 120°C. When using this device, take the margin into consideration by using an allowable Ta max-IF(AV) curve.
 - IFSM: This rating specifies the non-repetitive peak current. This is only applied for an abnormal operation, which seldom occurs during the lifespan of the device.
 - T_j: Derate this rating when using a device in order to ensure high reliability. We recommend that the device be used at a T_j of below 120°C.
- Thermal resistance between junction and ambient fluctuates depending on the device's mounting condition. When using a device, design a circuit board and a soldering land size to match the appropriate thermal resistance value.
- Please refer to the Rectifiers databook for further information.



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