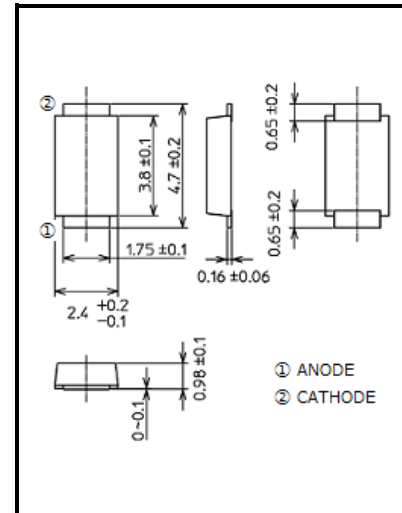


CMG07

○ General-Purpose Rectifiers

- Repetitive peak reverse voltage : $V_{RRM} = 400\text{ V}$
- Average forward current : $I_F (AV) = 1\text{ A}$
- Peak forward voltage : $V_{FM} = 1.1\text{ V (max) @}I_F = 1\text{ A}$
- Suitable for high-density board assembly due to the use of a small Toshiba Nickname: M-FLAT™

Unit: mm



JEDEC	—
JEITA	—
TOSHIBA	3-4E1S

Weight: 0.023 g (typ.)

Absolute Maximum Ratings (Ta = 25°C)

Characteristics	Symbol	Rating	Unit
Repetitive peak reverse voltage	V_{RRM}	400	V
Average forward current	$I_F (AV)$	1 (Note1)	A
Non-repetitive peak forward surge current	I_{FSM}	30 (50 Hz)	A
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	-40 to 150	°C

Note1: Ta=78°C Device mounted on a ceramic board
 Board size : 50 mm × 50 mm
 Soldering land size : 2 mm × 2 mm
 Board thickness : 0.64 mm
 Rectangular waveform : $\alpha = 180^\circ$

Note 2: 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).

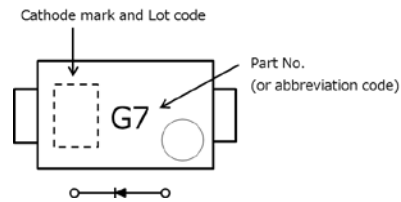
Electrical Characteristics (Ta = 25°C)

Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Peak forward voltage	$V_{FM} (1)$	$I_{FM} = 0.1\text{ A (pulse test)}$	—	0.80	—	V
	$V_{FM} (2)$	$I_{FM} = 0.7\text{ A (pulse test)}$	—	0.91	—	
	$V_{FM} (3)$	$I_{FM} = 1\text{ A (pulse test)}$	—	0.94	1.1	
Peak repetitive reverse current	I_{RRM}	$V_{RRM} = 400\text{ V (pulse test)}$	—	—	10	μA
Thermal resistance (junction to ambient)	$R_{th} (j-a)$	Device mounted on a ceramic board board size 50 mm × 50 mm soldering land size 2 mm × 2 mm board thickness 0.64 mm	—	—	60	°C/W
		Device mounted on a glass-epoxy board board size 50 mm × 50 mm soldering land size 6 mm × 6 mm board thickness 1.6 mm	—	—	125	
		Device mounted on a glass-epoxy board board size 50 mm × 50 mm soldering land size 2.1 mm × 1.4 mm board thickness 1.6 mm	—	—	200	
Thermal resistance (junction to lead)	$R_{th} (j-l)$	—	—	—	16	°C/W

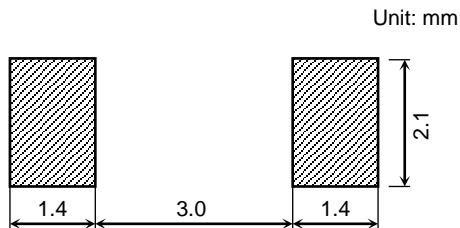
Start of commercial production
2008-10

Marking

Abbreviation Code	Part No.
G7	CMG07

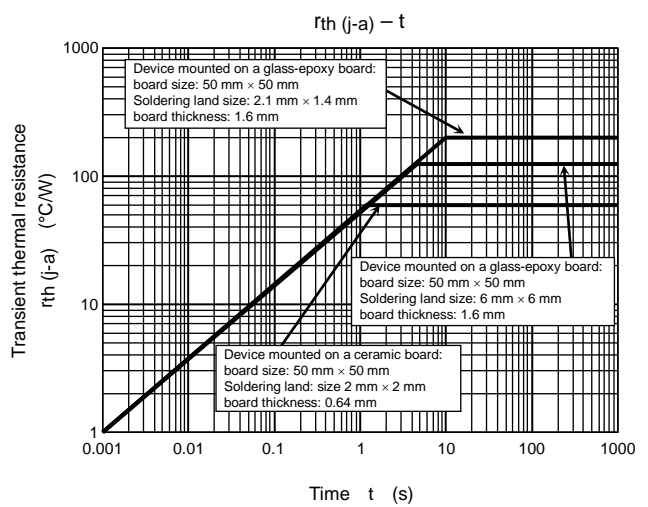
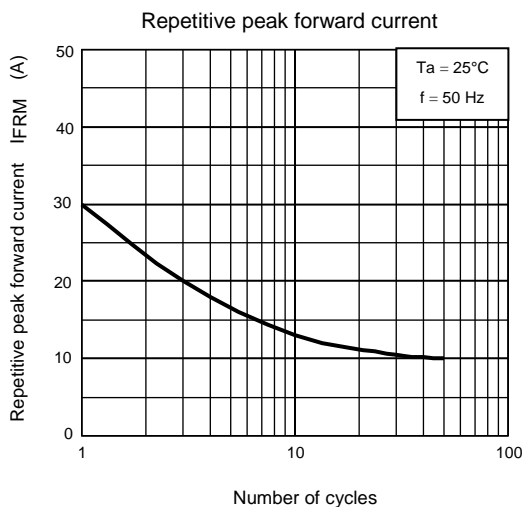
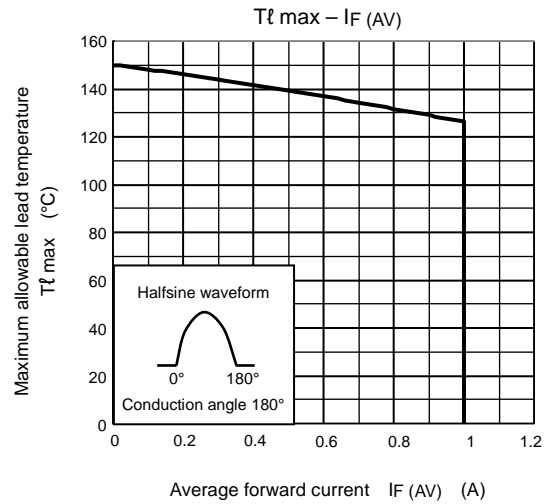
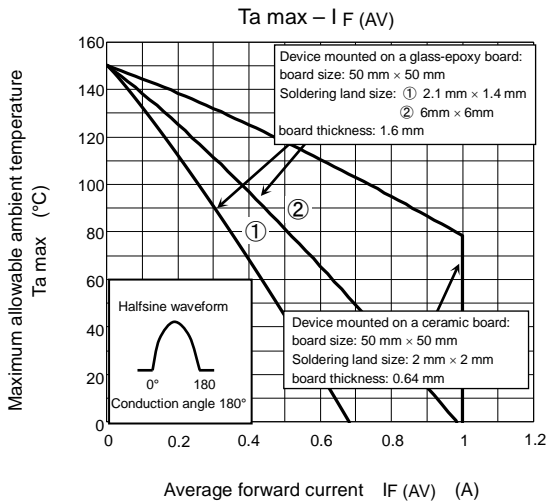
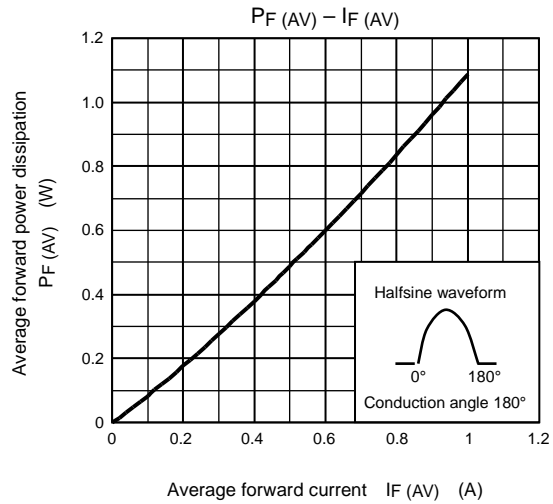
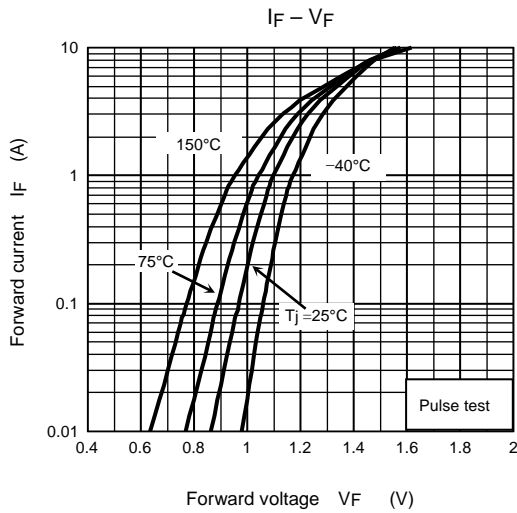


Land pattern dimensions for reference only



Handling Precaution

- 1) The absolute maximum ratings are rated values that must not be exceeded during operation, even for an instant. The following are the recommended general derating methods for designing a circuit board using this device.
 - VRRM : We recommend that the worst case voltage, including surge voltage, be no greater than 80% of the absolute 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 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 T_a max-IF (AV) curve.
 - IFSM : This rating specifies peak non-repetitive forward surge current. This only applies to an abnormal operation, which seldom occurs during the lifespan of a device.
 - T_j : Derate device parameters in proportion to this rating in order to ensure high reliability. We recommend that the junction temperature (T_j) of a device be kept below 120°C.
- 2) Thermal resistance (junction-to-ambient) varies with the mounting conditions of a device on a circuit board. An appropriate thermal resistance value should be used, considering the circuit board design and land pattern dimensions (provided for reference only).
- 3) For other design considerations, see the Toshiba website.



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