TOSHIBA BI-DIRECTIONAL TRIODE THYRISTOR SILICON PLANAR TYPE

SM2GZ47, SM2GZ47A, SM2JZ47, SM2JZ47A

AC POWER CONTROL APPLICATIONS

• IT (RMS) = 1A (Ta = 65°C without radiator)

• Gate Trigger Current: IGT = 5mA Max. (TYPE "A")

• Repetitive Peak Off-State Voltage: VDRM = 400V, 600V

• R.M.S On-State Current: IT (RMS) = 2A (Tc = 110°C)

• Isolation Voltage: V_{ISOL} = 1500V (AC, t = 60s)

ABSOLUTE MAXIMUM RATINGS

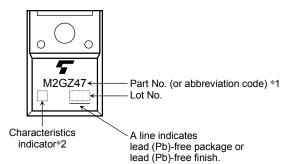
CHARACTER	ISTIC	SYMBOL	RATING	UNIT	
Repetitive Peak Off-State Voltage and Repetitive Peak Reverse Voltage	SM2GZ47 SM2GZ47A	$V_{ m DRM}$	400	V	
	SM2JZ47 SM2JZ47A	V DRM	600		
R.M.S On-State Current (Full Sine Waveform)	Tc = 110°C		2	А	
	Ta = 65°C	IT (RMS)	1		
Peak One Cycle Surge On-State Current (Non-Repetitive)		-	8 (50Hz)	А	
		ITSM	8.8 (60Hz)	Α	
I2t Limit Value		I2t	0.32	A2s	
Peak Gate Power Dissipation		P_{GM}	3	W	
Average Gate Power Dissipation		P _{G (AV)}	0.3	W	
Peak Gate Voltage		V_{FGM}	10	V	
Peak Gate Current		I _{GM}	1.6	Α	
Junction Temperature		Tj	-40~125	°C	
Storage Temperature Range		T _{stg}	-40~125	°C	
Isolation Voltage (AC, t	= 1min.)	V _{ISOL}	1500	V	

Weight: 1.7 g (typ.)

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).

MARKING



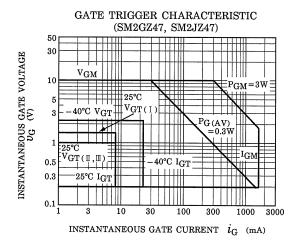
	Part No. (or abbreviation code)	Part No.
*1	M2GZ47	SM2GZ47, SM2GZ47A
	M2JZ47	SM2JZ47, SM2JZ47A
*2	Nothing	SM2GZ47, SM2JZ47
	Α	SM2GZ47A, SM2JZ47A

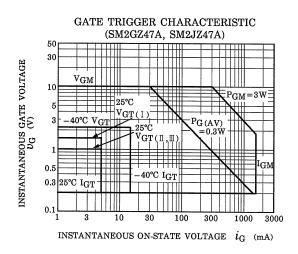
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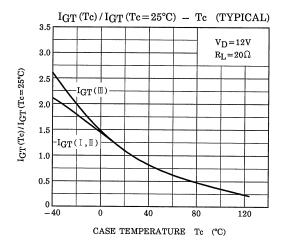


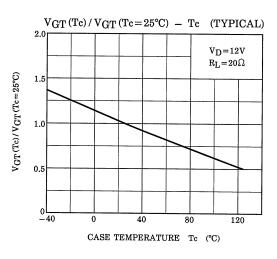
ELECTRICAL CHARACTERISTICS (Ta = 25°C)

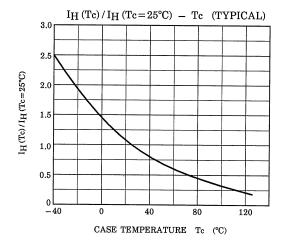
CHARACTERISTIC		SYMBOL	TEST CONDITION		MIN	TYP.	MAX	UNIT	
Repetitive Peak Off-State Current		I _{DRM}	V _{DRM} = Rated		-	_	20	μA	
Gate Trigger Voltage			V _D = 12V	T2 (+), Gate (+)	-	_	1.5	V	
				T2 (+), Gate (-)	_	_	1		
		III	- V _{GT}	R _L = 20Ω	T2 (-) , Gate (-)	_	_	1	
		IV			T2 (-), Gate (+)	_	_	_	
Gate Trigger Current		1	I _{GT}	$V_D = 12V$ $R_L = 20\Omega$	T2 (+), Gate (+)	_	_	8	mA
	SM2GZ47 SM2JZ47	II			T2 (+), Gate (-)	_	_	8	
		III			T2 (-), Gate (-)	_	_	8	
		IV			T2 (-), Gate (+)		_	_	
	SM2GZ47A SM2JZ47A	I			T2 (+), Gate (+)		_	5	
		П			T2 (+), Gate (-)	_	_	5	
		III			T2 (-), Gate (-)	_	_	5	
		IV			T2 (-) , Gate (+)		_	_	
Peak On-State Voltage		V _{TM}	I _{TM} = 3A		_	_	1.7	V	
Gate Non-Trigger Voltage		V_{GD}	V _D = Rated, Tc = 125°C		0.2	_	_	٧	
Holding Current		lΗ	R _L = 100Ω		_	_	10	mA	
Thermal Resistance		R _{th (j-a)}	Junction to Ambient, AC		_	_	55	°C / W	

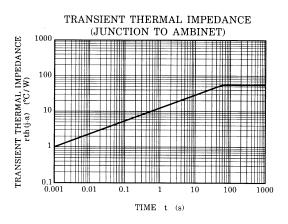


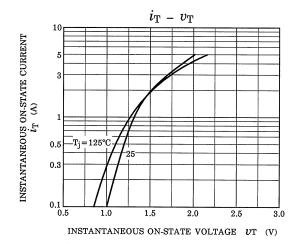


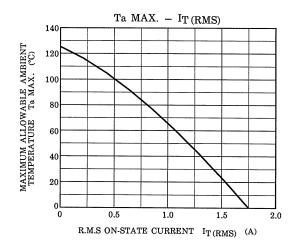












<CONDITION>

- ♦ NO HEAT SINK
- ◆ LEAD FORMING: LB182
- ◆ PRINT BOARD

f = 1.6 mmSOLDER LAND: $2 \text{mm} \phi$

2006-10-27

4

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