

SM2LZ47

AC POWER CONTROL APPLICATIONS

- Repetitive Peak Off-State Voltage : $V_{DRM} = 800V$
- R.M.S. On-State Current : $I_T (RMS) = 2A$
- High Commutation (dv / dt) : $(dv / dt) c = 5V / \mu s$ (Min.)
- Isolation Voltage : $V_{ISOL} = 1500V$ AC

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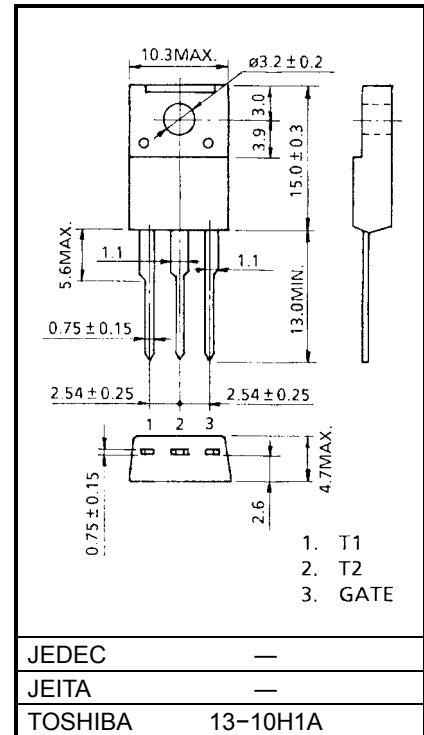
MAXIMUM RATINGS

CHARACTERISTIC	SYMBOL	RATING	UNIT
Repetitive Peak Off-State Voltage	V_{DRM}	800	V
R.M.S. On-State Current (Full Sine Waveform)	$I_T (RMS)$	2	A
Peak One Cycle Surge On-State Current (Non-Repetitive)	I_{TSM}	8 (50Hz)	A
		8.8 (60Hz)	
I^2t Limit Value	I^2t	0.32	A^2s
Critical Rate of Rise of On-State Current (Note)	di / dt	50	A / μs
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	A
Junction Temperature	T_j	-40~125	°C
Storage Temperature Range	T_{stg}	-40~125	°C
Isolation Voltage (AC, t = 1min.)	V_{ISOL}	1500	V

Note: di / dt test condition

$$V_{DRM} = 400V, I_{TM} \leq 3A, t_{gw} \geq 10\mu s, t_{gr} \leq 250ns, i_{gp} = I_{GT} \times 2.0$$

Unit: mm

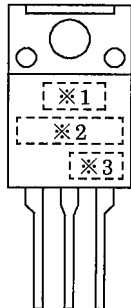


Weight: 1.7g

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

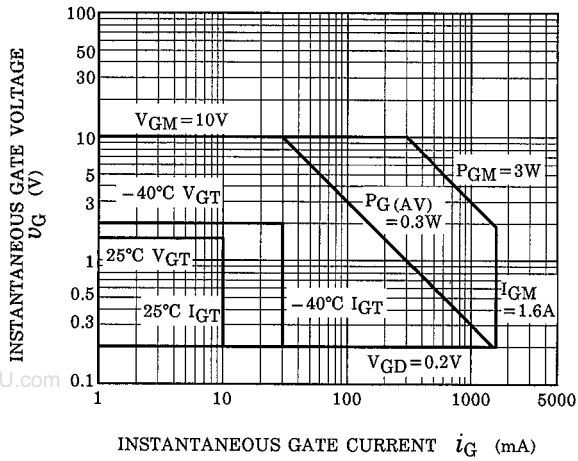
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN	TYP.	MAX	UNIT	
Repetitive Peak Off-State Current	I_{DRM}	$V_{DRM} = 800V$	—	—	20	μA	
Gate Trigger Voltage	I II III	V_{GT} $V_D = 12V,$ $R_L = 20\Omega$	T2 (+), Gate (+)	—	—	1.5	V
			T2 (+), Gate (-)	—	—	1.5	
			T2 (-), Gate (-)	—	—	1.5	
Gate Trigger Current	I II III	I_{GT} $V_D = 12V,$ $R_L = 20\Omega$	T2 (+), Gate (+)	—	—	10	mA
			T2 (+), Gate (-)	—	—	10	
			T2 (-), Gate (-)	—	—	10	
Peak On-State Voltage	V_{TM}	$I_{TM} = 3A$	—	—	2.0	V	
Gate Non-Trigger Voltage	V_{GD}	$V_D = 800V, T_c = 125^\circ C$	0.2	—	—	V	
Holding Current	I_H	$V_D = 12V, I_{TM} = 1A$	—	—	10	mA	
Thermal Resistance	$R_{th(j-a)}$	Junction to Ambient, AC	—	—	58	$^\circ C / W$	
Critical Rate of Rise of Off-State Voltage	dv / dt	$V_{DRM} = 800V, T_j = 125^\circ C$ Exponential Rise	—	500	—	$V / \mu s$	
Critical Rate of Rise of Off-State Voltage at Communication	$(dv / dt)_c$	$V_{DRM} = 400V, T_j = 125^\circ C$ $(di / dt)_c = -0.5A / ms$	5	—	—	$V / \mu s$	

MARKING

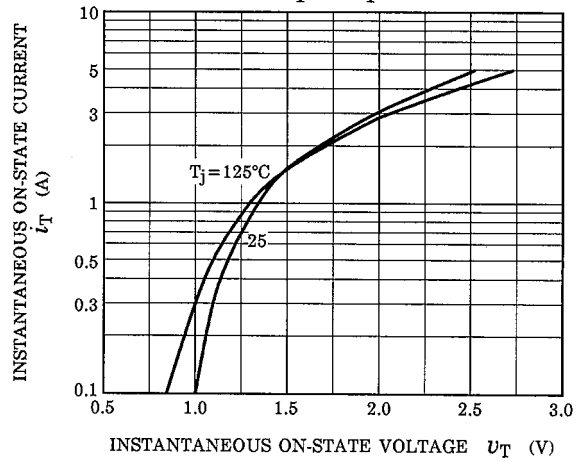


NUMBER	SYMBOL	MARK
*1	Toshiba Product Mark	
*2	TYPE	SM2LZ47
*3	Lot Number Month (Starting from Alphabet A) Year (Last Decimal Digit of the Current Year)	Example 8A : January 1998 8B : February 1998 8L : December 1998

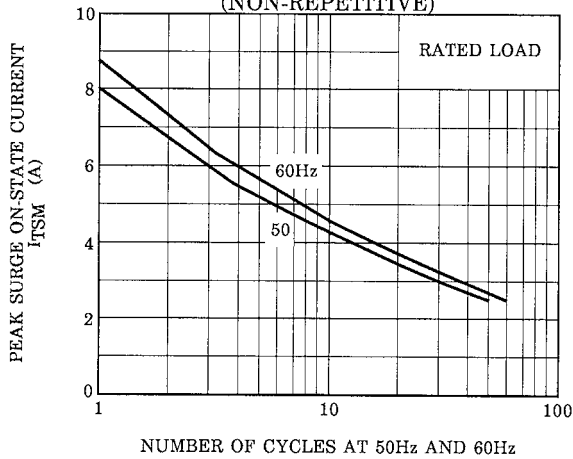
GATE TRIGGER CHARACTERISTIC



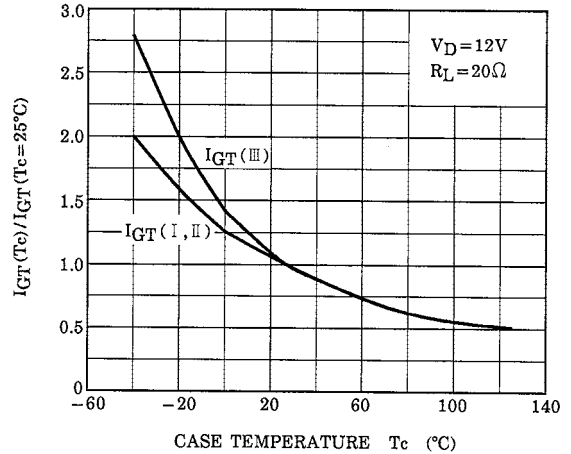
$i_T - u_T$



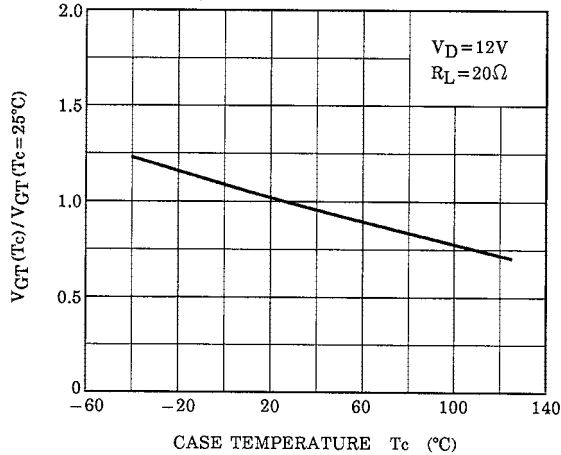
SURGE ON-STATE CURRENT (NON-REPETITIVE)



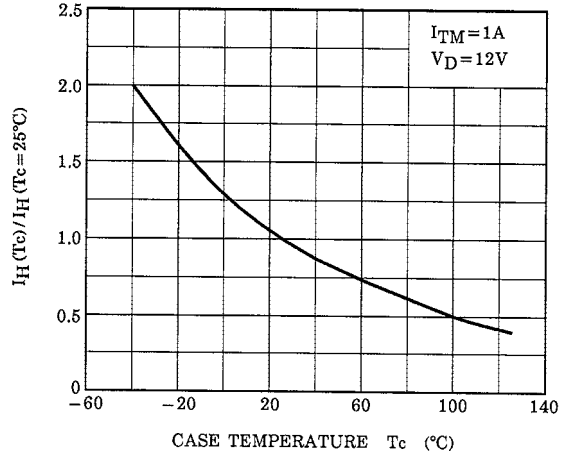
$I_{GT}(T_c) / I_{GT}(T_c=25^\circ C) - T_c$ (TYPICAL)

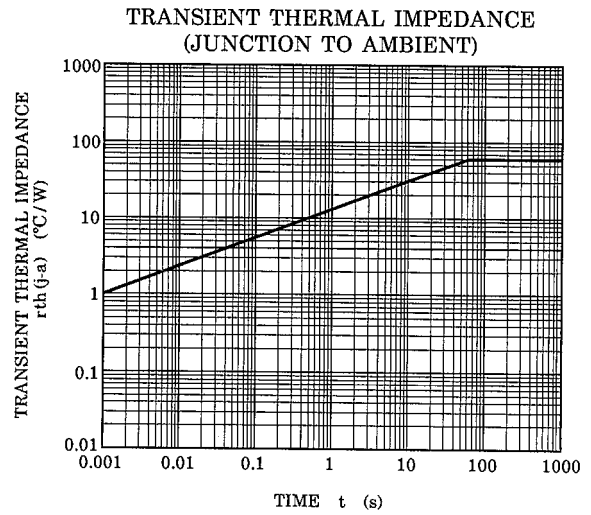
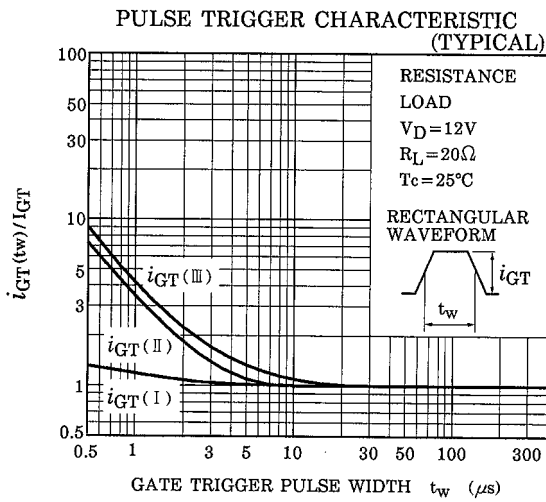
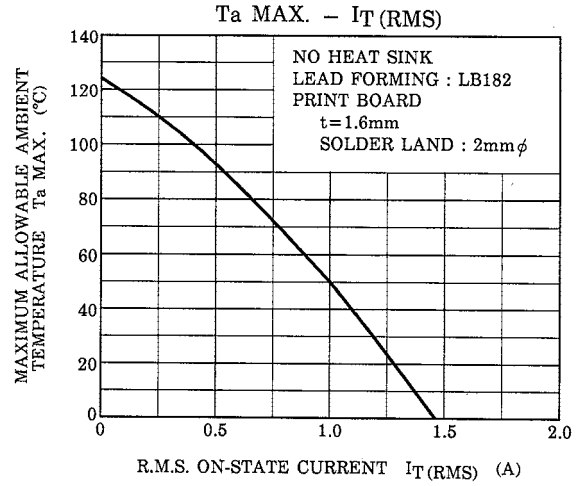
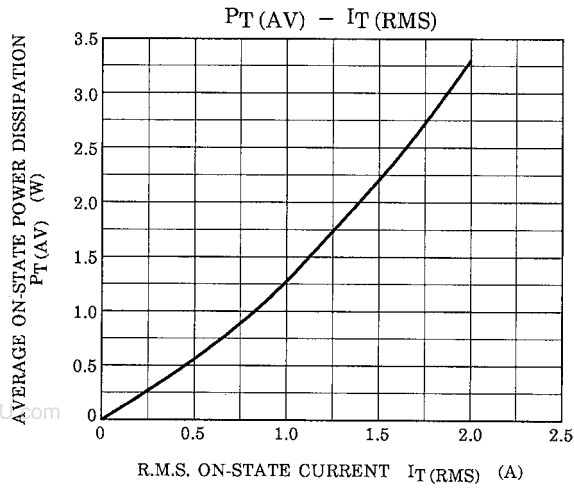


$V_{GT}(T_c) / V_{GT}(T_c=25^\circ C) - T_c$ (TYPICAL)



$I_H(T_c) / I_H(T_c=25^\circ C) - T_c$ (TYPICAL)





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