

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

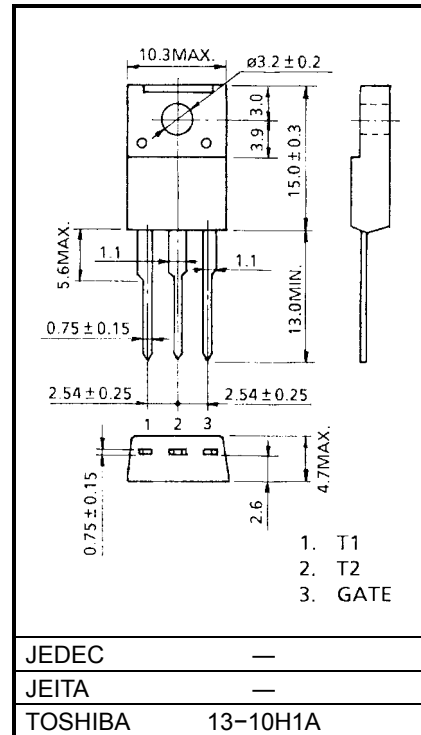
MAXIMUM RATINGS

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) 8.8 (60Hz)	A
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

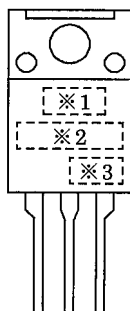


Weight: 1.7g

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

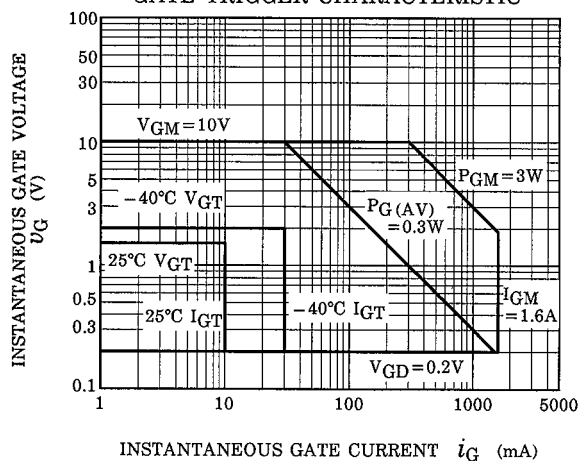
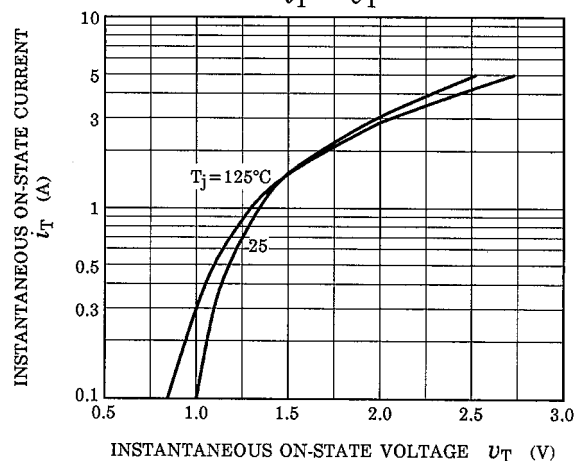
CHARACTERISTIC		SYMBOL	TEST CONDITION		MIN	TYP.	MAX	UNIT
Repetitive Peak Off-State Current		I_{DRM}	$V_{DRM} = 800V$		—	—	20	μA
Gate Trigger Voltage	I	V_{GT}	$V_D = 12V$, $R_L = 20\Omega$	T2 (+) , Gate (+)	—	—	1.5	V
	II			T2 (+) , Gate (-)	—	—	1.5	
	III			T2 (-) , Gate (-)	—	—	1.5	
Gate Trigger Current	I	I_{GT}	$V_D = 12V$, $R_L = 20\Omega$	T2 (+) , Gate (+)	—	—	10	mA
	II			T2 (+) , Gate (-)	—	—	10	
	III			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 / μs
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 / μs

MARKING

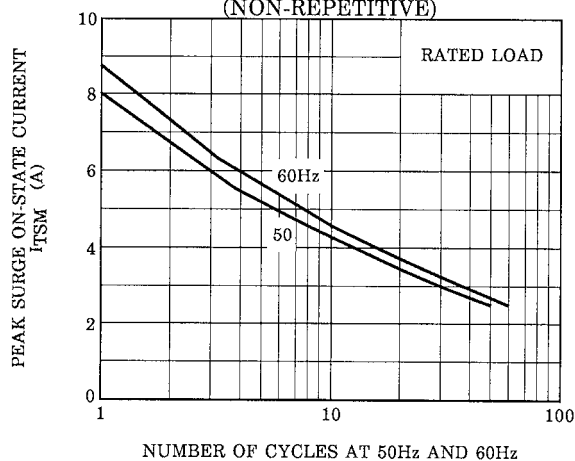
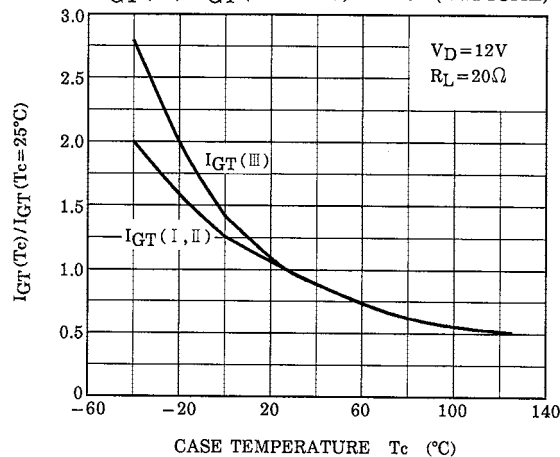
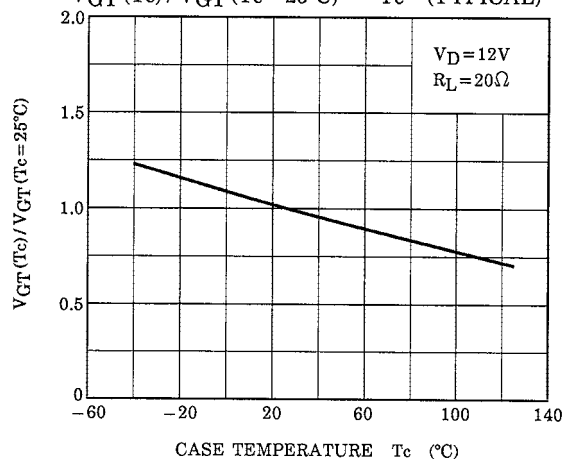
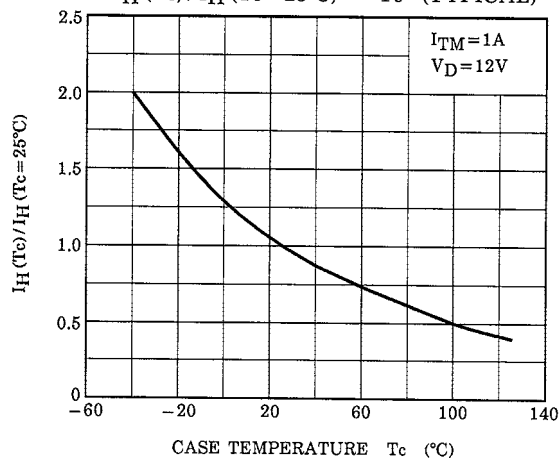


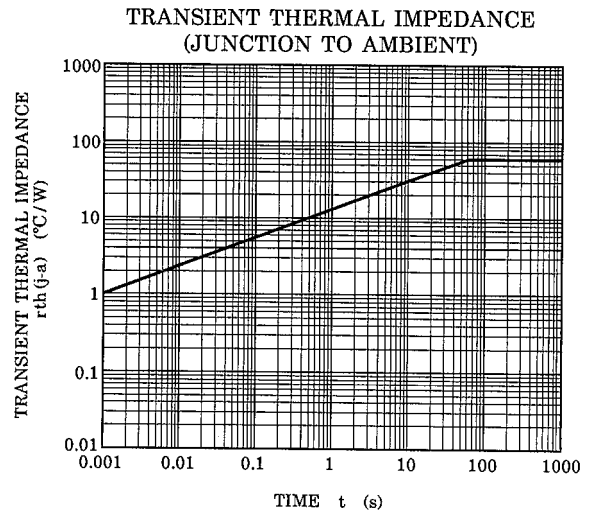
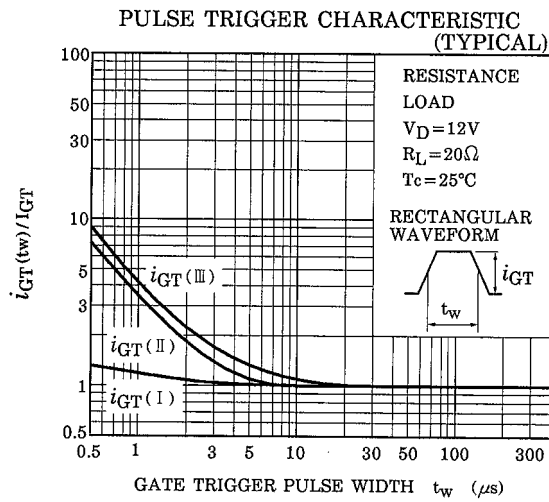
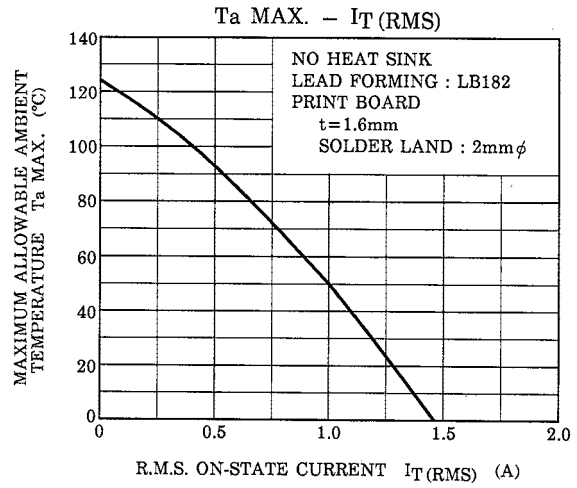
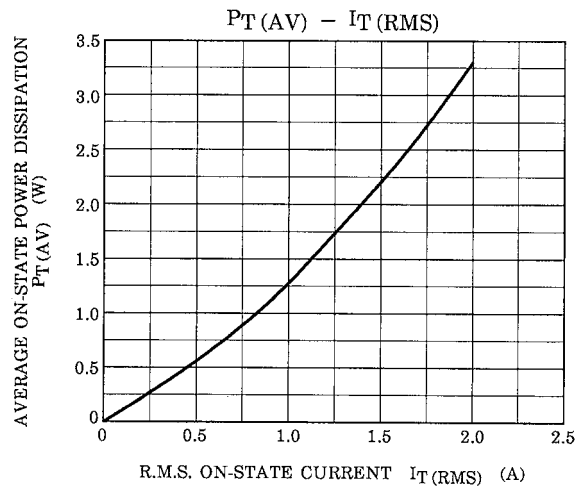
NUMBER	SYMBOL		MARK
*1	Toshiba Product Mark		
*2	TYPE	SM2LZ47	M2LZ47
*3	Lot Number Month (Starting from Alphabet A) Year (Last Decimal Digit of the Current Year)		Example 8A : January 1998 8B : February 1998 8L : December 1998

GATE TRIGGER CHARACTERISTIC


$$i_T - v_T$$


**SURGE ON-STATE CURRENT
(NON-REPETITIVE)**


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

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

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




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