

# 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

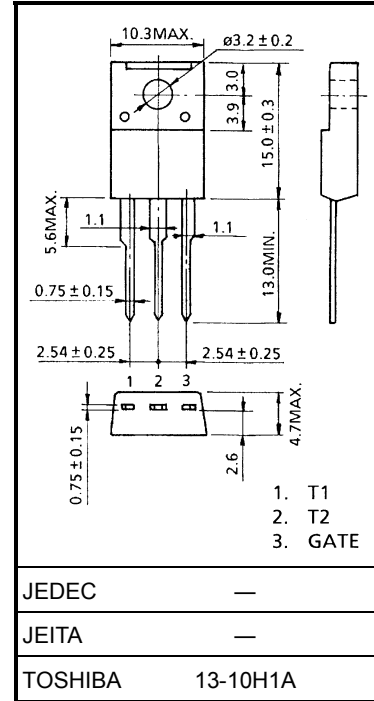
## MAXIMUM RATINGS

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
$I^2_t$ Limit Value	$I^2_t$	0.32	$A^2 s$
Critical Rate of Rise of On-State Current (Note)	$di / dt$	50	A / $\mu s$
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

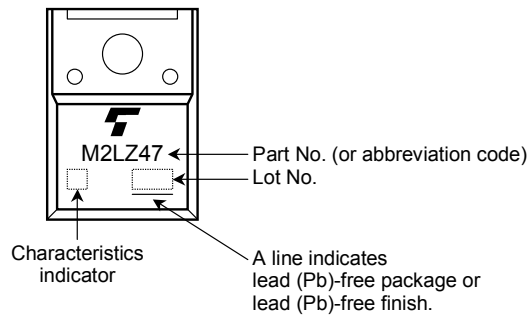


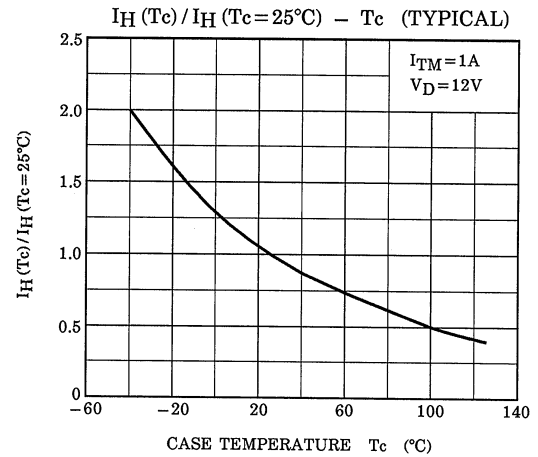
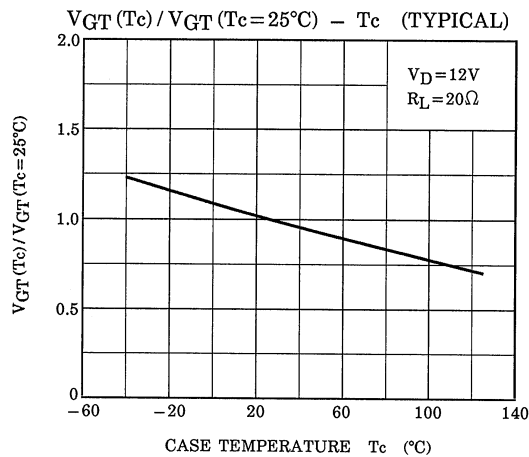
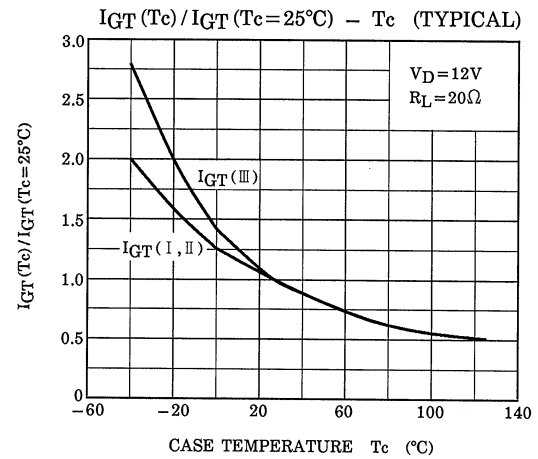
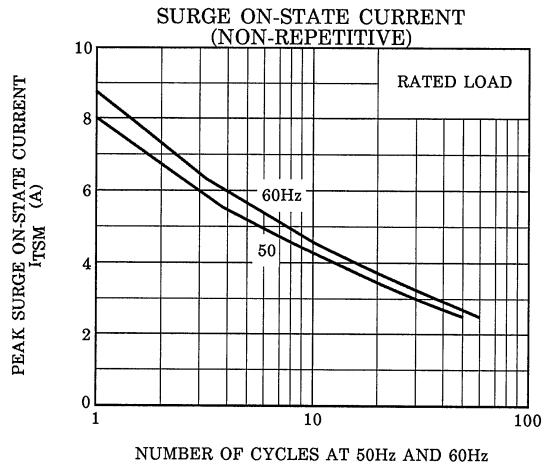
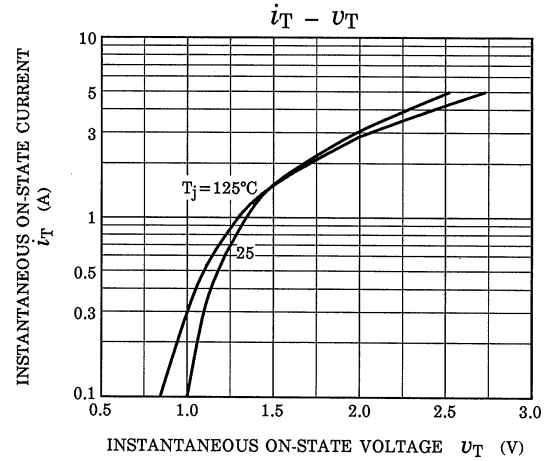
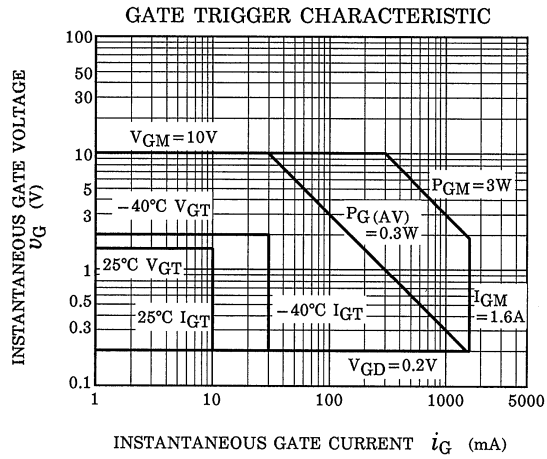
Weight: 1.7 g (typ.)

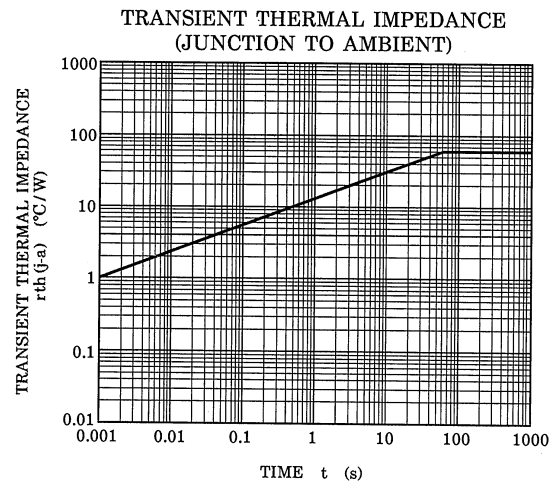
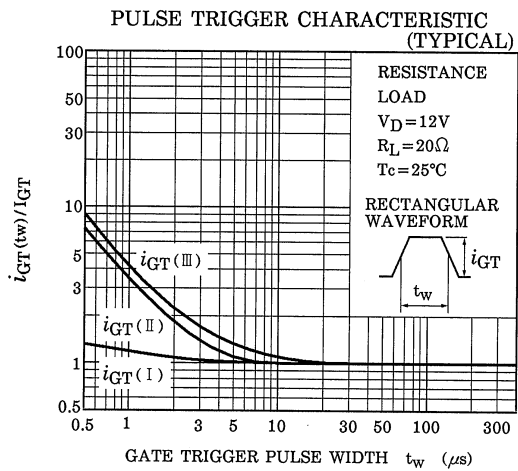
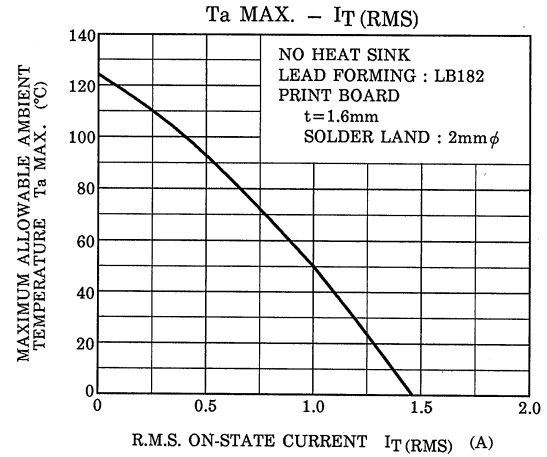
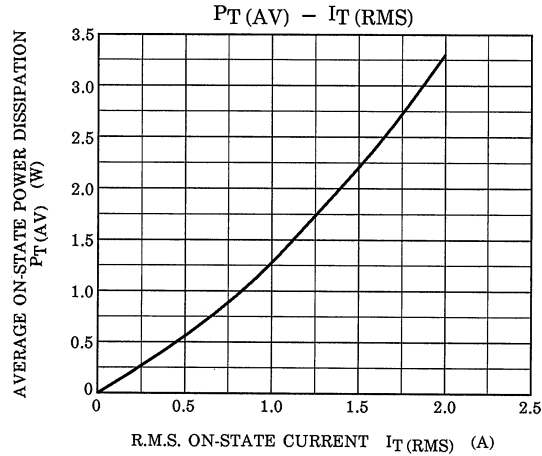
## ELECTRICAL CHARACTERISTICS (Ta = 25°C)

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

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