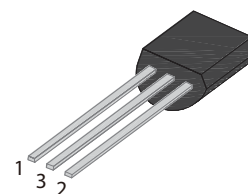


FEATURES

- Direct interfacing to logic level ICs
- Direct interfacing to low power gate drive circuits
- High blocking voltage capability
- Planar passivated for voltage ruggedness and reliability
- Triggering in all four quadrant



TO-92

APPLICATIONS

- General purpose motor control circuits
- Phase control operations in light dimmers and motor speed controllers
- Home appliances



Schematic Symbol

ABSOLUTE MAXIMUM RATINGS

Parameter		Symbol	Value	Unit
Repetitive peak off-state voltage ($T_J=25^{\circ}\text{C}$)		V_{DRM}	600	V
Repetitive peak reverse voltage ($T_J=25^{\circ}\text{C}$)		V_{RRM}	600	V
RMS on-state current ($T_c=50^{\circ}\text{C}$)		$I_{\text{T(RMS)}}$	0.8	A
Non repetitive surge peak on-state current (full cycle, $F=50\text{Hz}$)		I_{TSM}	9	
I^2t value for fusing ($t_p=10\text{ms}$)		I^2t	0.45	A^2S
Critical rate of rise of on-state current ($I_G=2 \times I_{\text{GT}}$)	I - II - III	d/d_t	50	$\text{A}/\mu\text{s}$
	IV		20	
Peak gate current		I_{GM}	1	A
Average gate power dissipation		$P_{\text{G(AV)}}$	0.1	W
Peak gate power		P_{GM}	1	W
Operating junction temperature range		T_J	-40~+125	$^{\circ}\text{C}$
Storage junction temperature range		T_{STG}	-40~+150	

ELECTRICAL CHARACTERISTICS ($T_j=25^{\circ}\text{C}$ unless otherwise specified)

Symbol	Test Condition	Quadrant	Value	Unit
I_{GT}	$V_D=12\text{V}$	I - II - III	≤ 5	mA
V_{GT}		IV	≤ 7	
V_{GD}	$V_D=V_{DRM}, R_L=3.3\text{K}\Omega, T_j=125^{\circ}\text{C}$	ALL	≤ 1.3	V
I_H	$I_t=100\text{mA}$		≤ 10	mA
I_L	$I_G=1.2I_{GT}$	I - III	≤ 10	
		II - IV	≤ 10	
dV_D/dt	$V_D=67\%V_{DRM}, T_j=125^{\circ}\text{C}$		≥ 30	V/ μs
V_{TM}	$I_{TM}=1.1\text{A}, t_p=380\mu\text{s}$		≤ 1.5	V
I_{DRM}	$V_D=V_{DRM}, V_R=V_{RRM}$	$T_j=25^{\circ}\text{C}$	≤ 5	μA
I_{RRM}		$T_j=125^{\circ}\text{C}$	≤ 100	μA

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	Junction to case(AC)	75	$^{\circ}\text{C}/\text{W}$

PARAMETER CHARACTERISTIC CURVE

FIG.1 Maximum power dissipation versus RMS on-state current

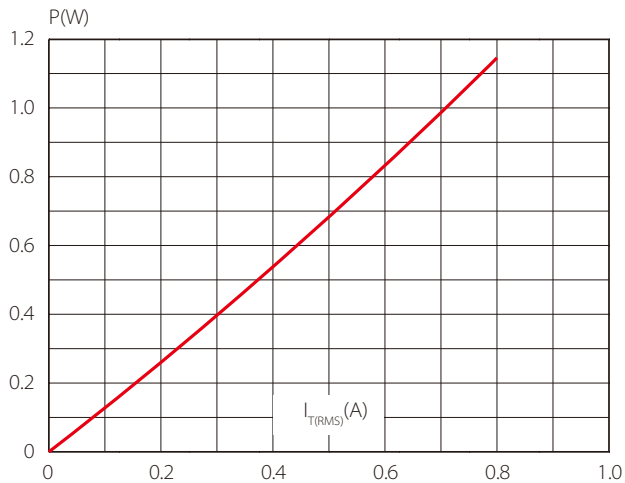


FIG.2: RMS on-state current versus case temperature

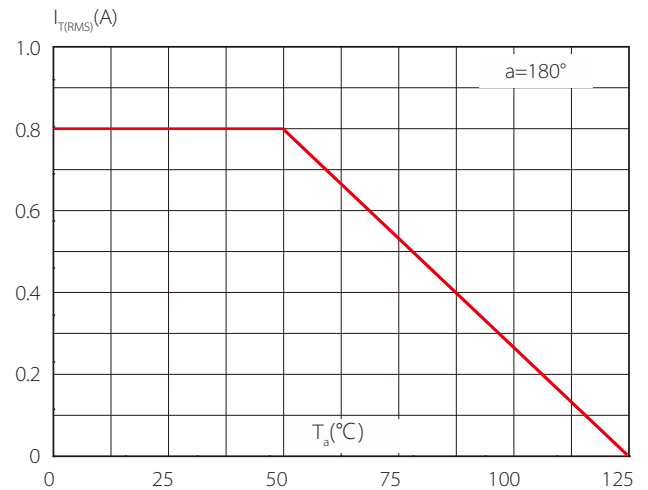


FIG.3: Surge peak on-state current versus number of cycles

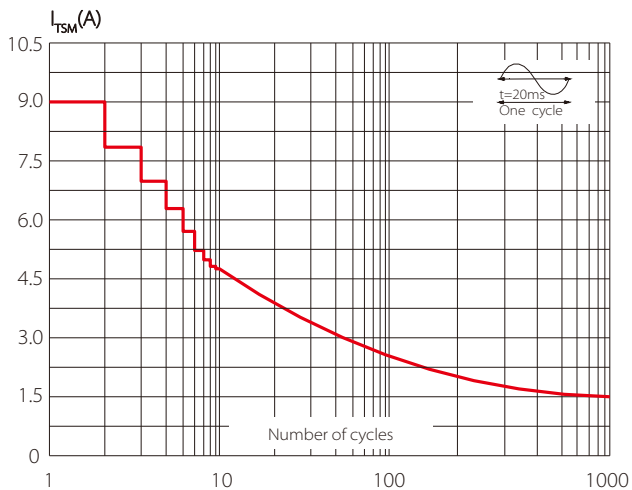


FIG.4 On-state characteristics (maximum values)

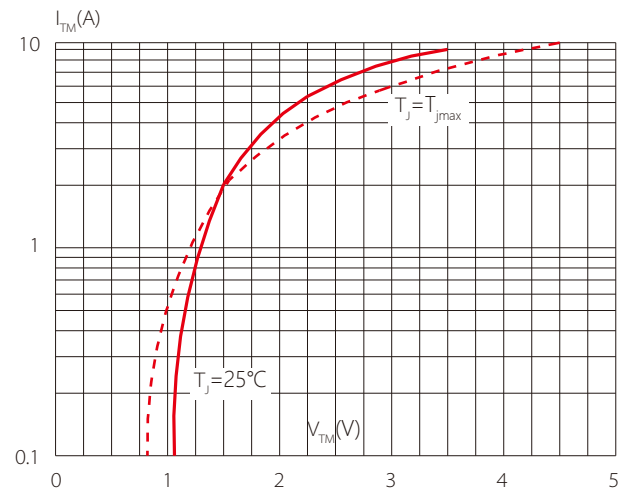


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 20\text{ms}$ and corresponding value of I^2t ($di/dt < 50\text{A}/\mu\text{s}$)

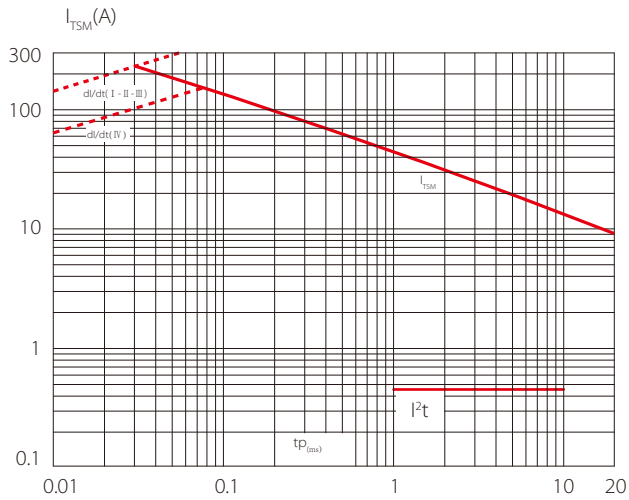


FIG.6 Relative variations of gate trigger current versus junction temperature

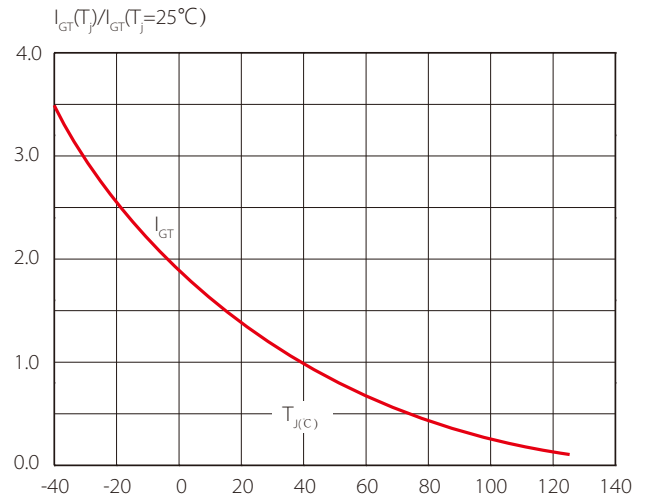


FIG.7 Relative variations of holding current versus junction temperature

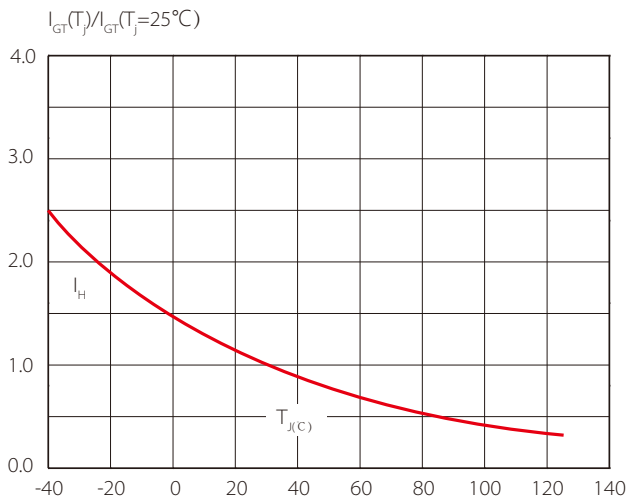
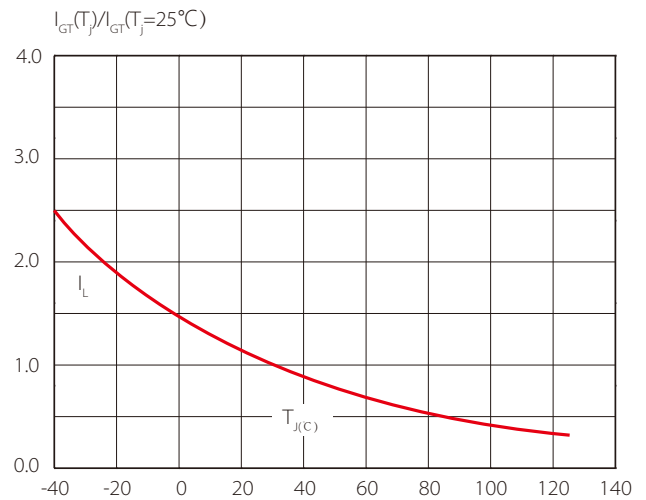
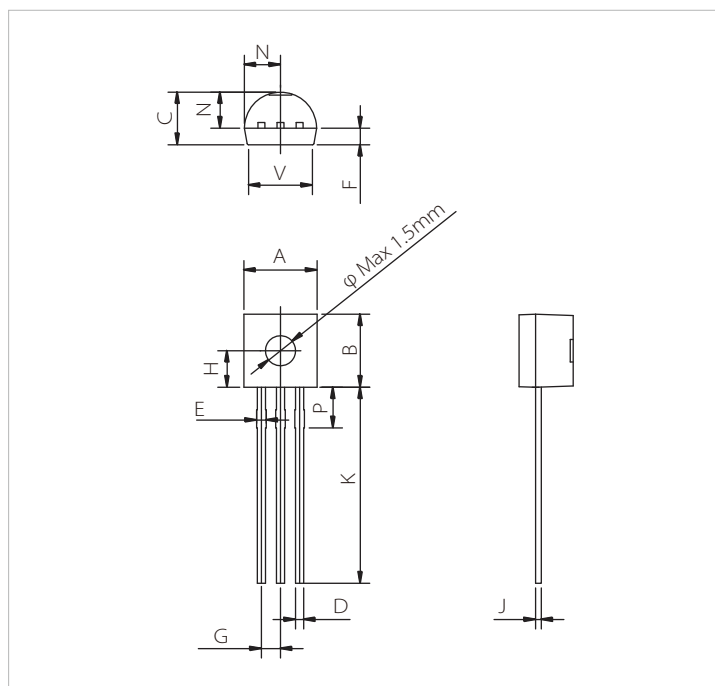


FIG.8 Relative variations of atching current versus junction temperature



TO-92 PACKAGE DIMENSIONS



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.45		5.20	0.175		0.205
B	4.32		5.33	0.170		0.210
C	3.18		4.19	0.125		0.165
D	0.40		0.54	0.016		0.021
E	0.60		0.80	0.024		0.031
F		1.10			0.043	
G		1.27			0.050	
H		2.30			0.091	
J	0.36		0.50	0.014		0.020
K	12.7		15.0	0.500		0.591
N	2.04		2.66	0.080		0.105
P	1.86		2.06	0.073		0.081
V			4.30			0.169

ORDERING INFORMATION

Part Number	Package	Qty/pcs		
		Shielding Bag	Inner Box	Carton
MAC97A8	TO-92	1000	10000	30000

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