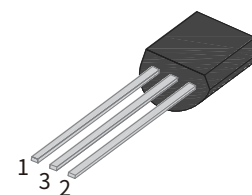


FEATURES

- | 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}	800	V
Repetitive peak reverse voltage ($T_j=25^\circ\text{C}$)	V_{RRM}	800	V
RMS on-state current ($T_c=50^\circ\text{C}$)	$I_{\text{T(RMS)}}$	1	A
Non repetitive surge peak on-state current (full cycle, $F=50\text{Hz}$)	I_{TSM}	16	
I^2t value for fusing ($t_p=10\text{ms}$)	I^2t	1.28	A^2S
Critical rate of rise of on-state current ($I_G=2 \times I_{\text{GT}}$)	di/dt	20	$\text{A}/\mu\text{s}$
Peak gate current	I_{GM}	2	A
Average gate power dissipation	$P_{\text{G(AV)}}$	0.5	W
Peak gate power	P_{GM}	5	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°C unless otherwise specified)

Symbol	Test Condition	Quadrant	Value		Unit
			D	T	
I _{GT}	V _D =12V	I - II - III	≤5	≤5	mA
		IV	≤10	≤5	
V _{GT}		ALL	≤1.3		V
V _{GD}	V _D =V _{DRM} , R _L =3.3KΩ, T _j =125°C		≥0.2		V
I _H	I _T =100mA		≤7	≤5	mA
I _L	I _G =1.2I _{GT}	I - III	≤5	≤5	
		II - IV	≤20	≤10	
dV _D /dt	V _D =67%V _{DRM} , T _j =125°C		≥20	≥15	V/μs
V _{TM}	I _{TM} =1.4A, tp=380μs		≤1.5		V
I _{DRM}	V _D =V _{DRM} , V _R =V _{RRM}	T _j =25°C	≤5		μA
I _{RRM}		T _j =125°C	≤500		μA

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
R _{th(j-c)}	Junction to case(AC)	60	°C/W

PARAMETER CHARACTERISTIC CURVE

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

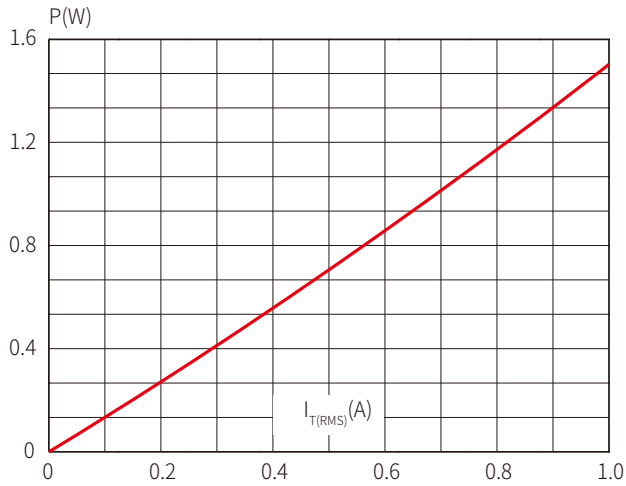


FIG.2: RMS on-state current versus case temperature

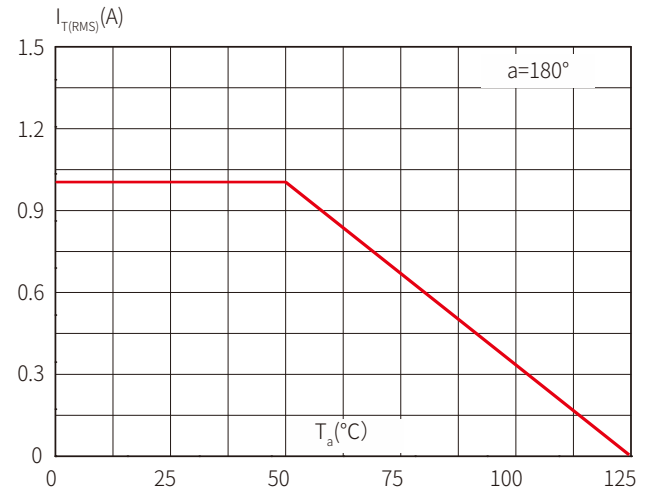


FIG.3: Surge peak on-state current versus number of cycles

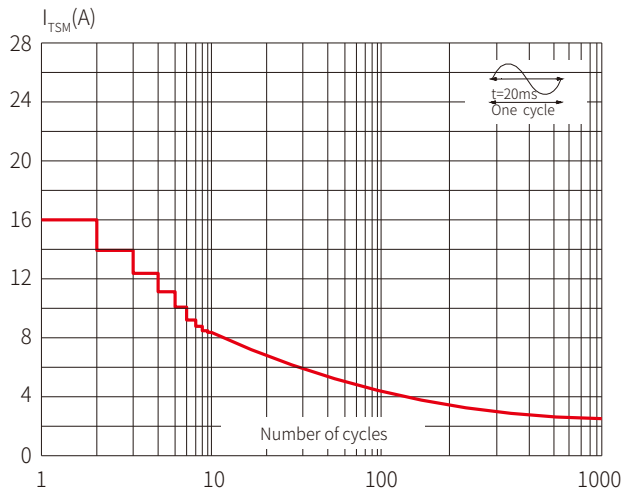


FIG.4 On-state characteristics (maximum values)

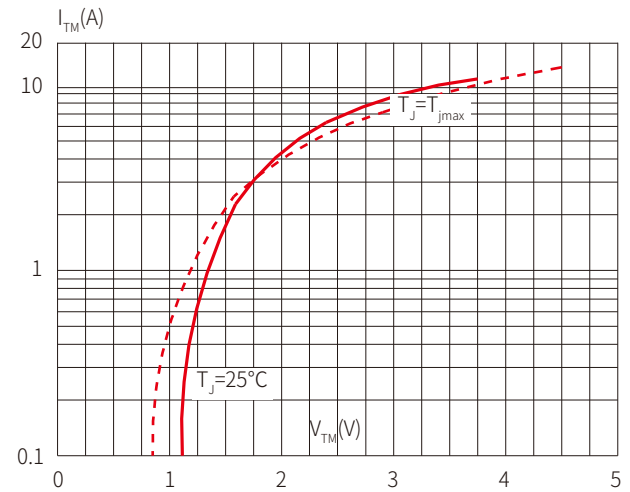


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 20\text{ms}$ and corresponding value of I^2t ($dI/dt < 50\text{A}/\mu\text{s}$)

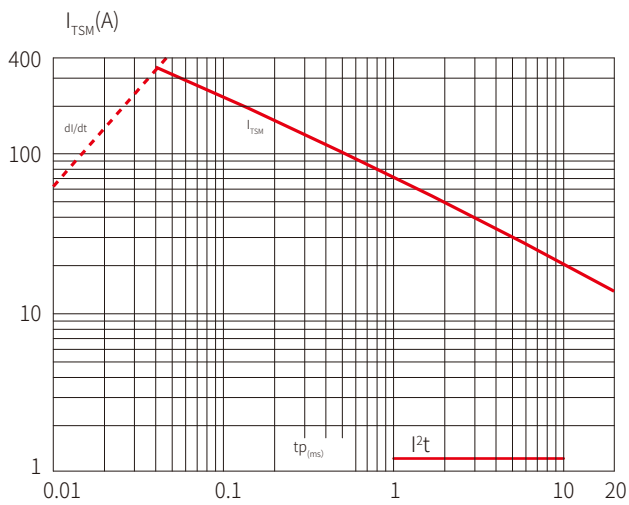


FIG.6 Relative variations of gate trigger current versus junction temperature

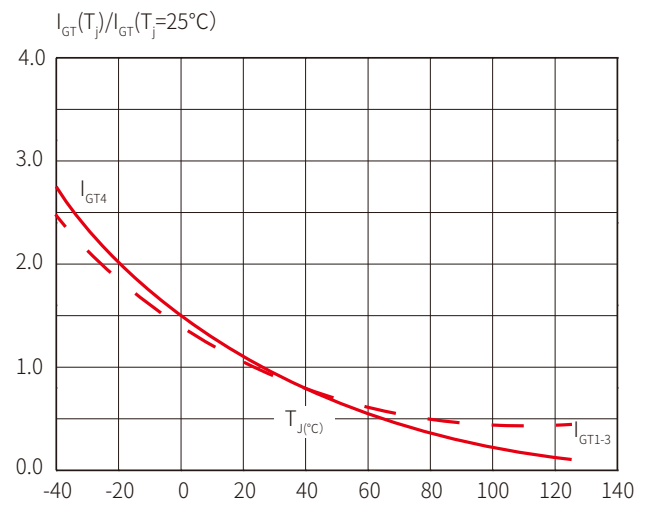


FIG.7 Relative variations of holding current versus junction temperature

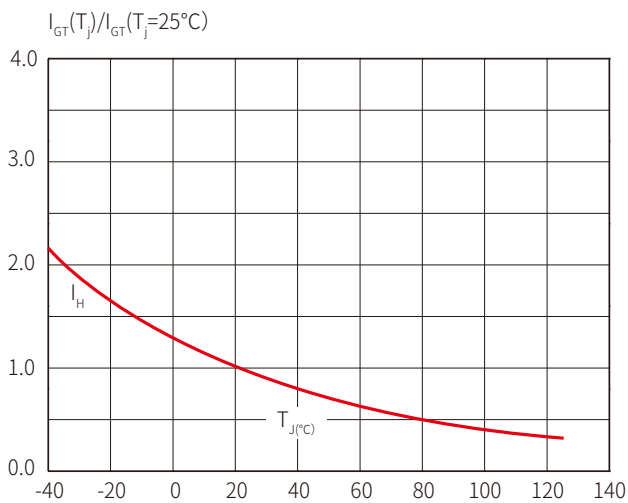
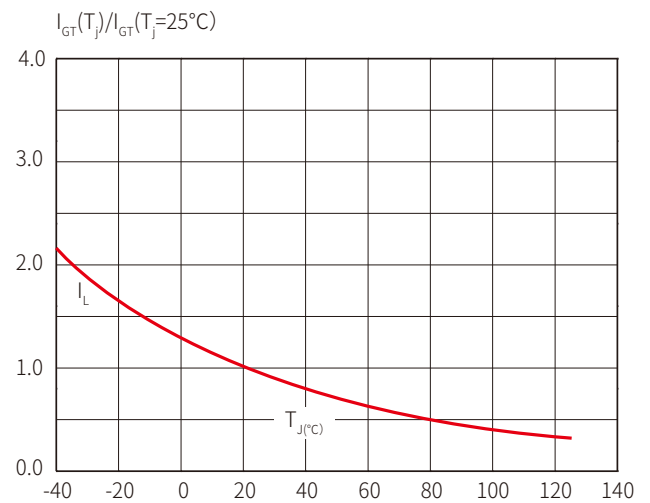
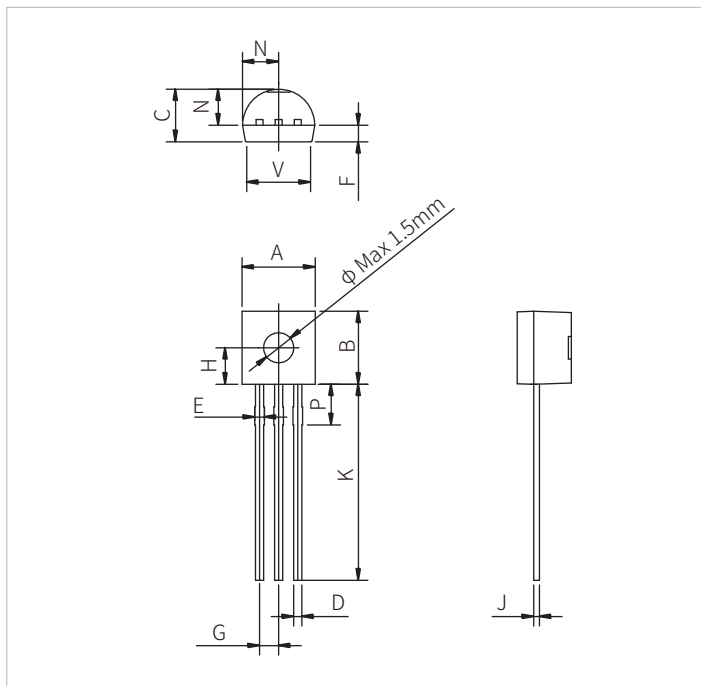


FIG.8 Relative variations of latching current versus junction temperature



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
STN1Q80D(T)	TO-92	1000	10000	30000

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