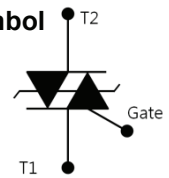
SemiHow
Know-How for Semiconductor

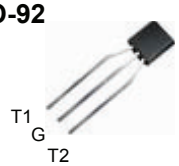
HTB1A80AS
1A TRIAC

V_{DRM} = 1000 V
$I_{T(RMS)}$ = 1 A
I_{TSM} = 11 A
I_{GT} = 5mA

Symbol



TO-92



FEATURES

- Repetitive Peak Off-State Voltage : 1000V
- R.M.S On–State Current ($I_{T(RMS)}$ = 1A)
- Gate Trigger Current : 5mA
- dV/dt ≥ 400V/us

General Description

Intended for use in AC static switching and industrial control systems, driving low power highly inductive load like solenoid, pump, fan ad micro-motor.

Absolute Maximum Ratings (T_J=25℃ unless otherwise specified)

Symbol	Parameter	Conditions	Ratings	Unit
V_{DRM}	Repetitive Peak Off-State Voltage	Sine wave, 50/60Hz, Gate open	1000	V
V_{RRM}	Repetitive Peak Reverse Voltage		1000	V
V_{DSM}	Non-Repetitive Surge Peak Off-State Voltage		1100	V
V_{RSM}	Non-Repetitive Peak Reverse Voltage		1100	V
$I_{T(RMS)}$	R.M.S. On-State Current	Full sine wave, T_C = 57°C	1	A
I_{TSM}	Non-Repetitive Surge Peak On-State Current	Full sine wave, 50Hz/60Hz	10/11	A
I^2t	Fusing Current	t = 10ms	1.12	A^2S
P_{GM}	Forward Peak Gate Power Dissipation	T_J = 125 ˚C	1	W
$P_{G(AV)}$	Forward Average Gate Power Dissipation	T_J = 125 ˚C	1	W
I_{GM}	Peak Gate Current	tp=20us, T_J = 125 ˚C	1	A
T_J	Operating Junction Temperature		-40~+125	°C
T_{STG}	Storage Temperature		-40~+150	°C

Electrical Characteristics (T_J=25℃ unless otherwise specified)

Symbol	Parameter	Conditions		Min	Typ	Max	Unit
I_{DRM}	Repetitive Peak Off-State Current	$V_D = V_{DRM}$	T_J=25°C	-	-	10	uA
			T_J=125°C	-	-	500	uA
I_{RRM}	Repetitive Peak Reverse Current	$V_R = V_{RRM}$	T_J=25°C	-	-	10	uA
			T_J=125°C	-	-	500	uA
I_{GT}	Gate Trigger Current	V_D = 12V, R_L=30Ω	1+	-	-	3	mA
			1-, 3-	-	-	5	mA
V_{GT}	Gate Trigger Voltage	V_D = 12V, R_L=30Ω	1+, 1-, 3-	-	-	1.4	V
V_{GD}	Non-Trigger Gate Voltage	V_D = 2/3V_{DRM}, R_L=3.3KΩ, T_J=125°C		0.2	-	-	V
I_L	Latching Current	I_G= 1.2I_{GT}	1+, 3-	-	-	15	mA
			1-	-	-	25	mA
I_H	Holding Current	I_T= 100mA		-	-	10	mA
V_{TM}	Peak On-State Voltage	I_T = 1.4A, tp = 380uS		-	-	1.5	V
dv/dt	Critical Rate of Rise of Off-State Voltage	V_D = 2/3 V_{DRM}, Gate open, T_J=125°C		400	-	-	V/us

Thermal Characteristics

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
$R_{\theta JC}$	Thermal Resistance	Junction to Case			60	°C/W

Typical Characteristics

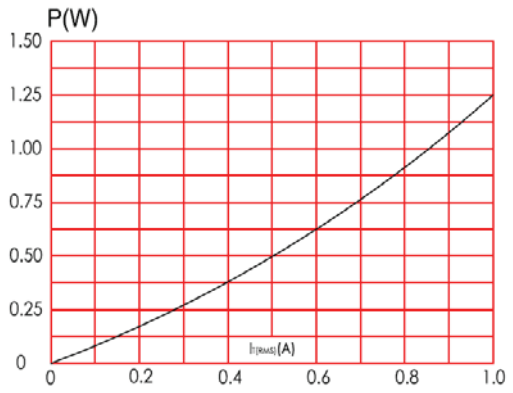


Fig 1. R.M.S. current vs. Power dissipation

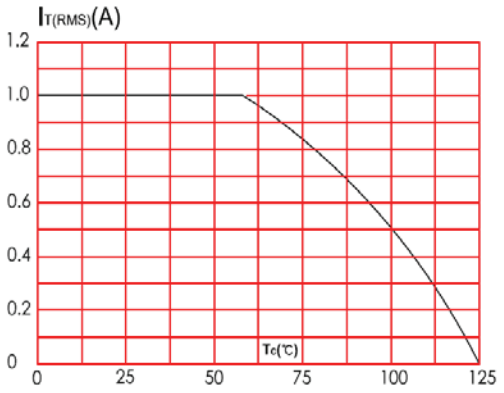


Fig 2. R.M.S. current vs. Case temperature

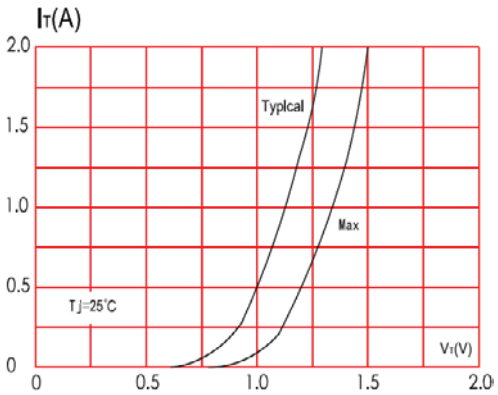


Fig 3. Surge on state characteristics

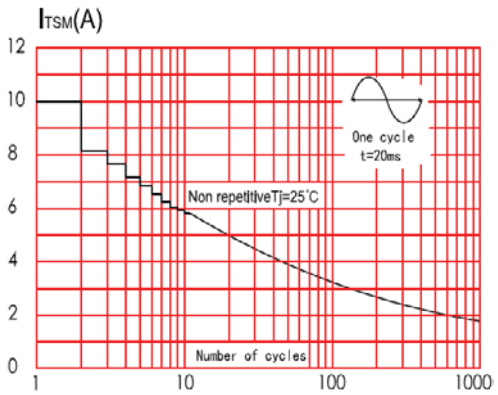


Fig 4. Surge on state current rating

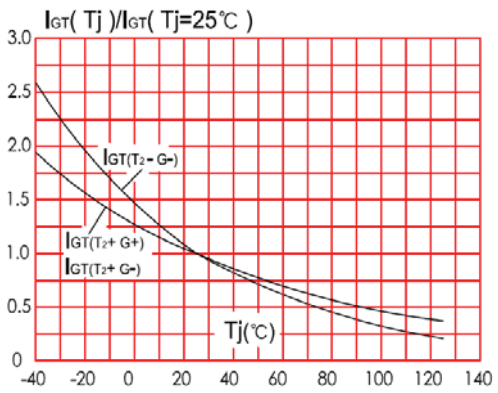


Fig 5. Gate trigger current vs. junction temperature

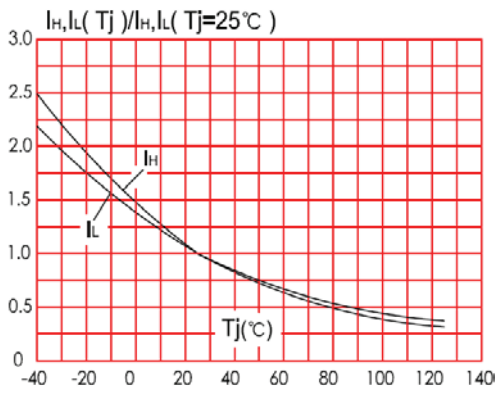
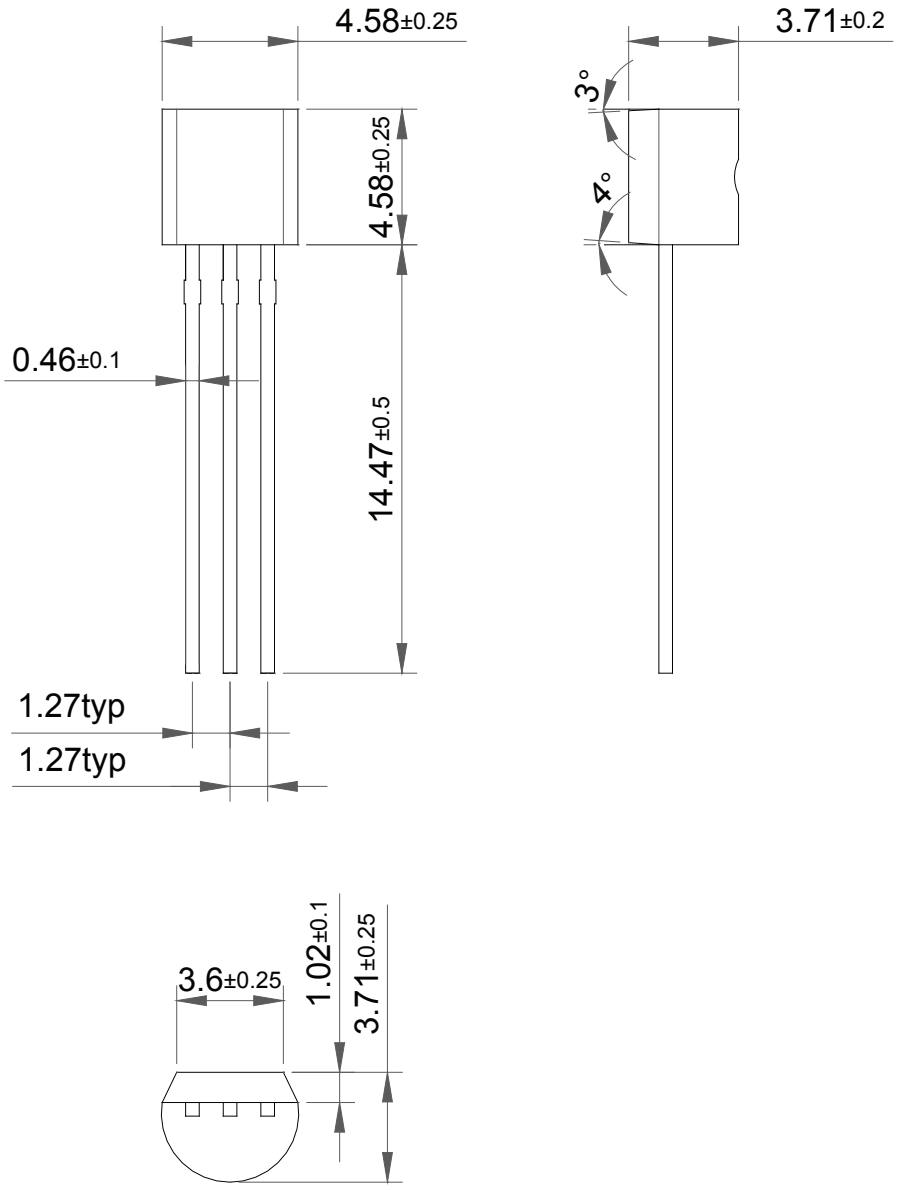


Fig 6. Holding and latching current vs. junction temperature

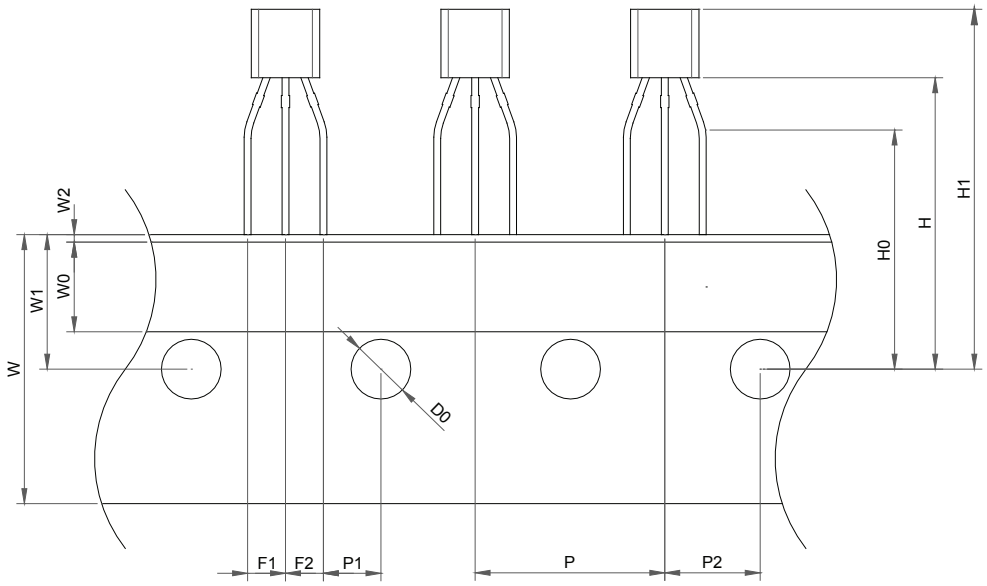
Package Dimension

TO-92 BULK



Package Dimension

TO-92 TAPING



Item	Symbol	Dimension [mm]	
		Reference	Tolerance
Component pitch	P	12.7	±0.5
Side lead to center of feed hole	P1	3.85	±0.5
Center lead to center of feed hole	P2	6.35	±0.5
Lead pitch	FI,F2	2.5	+0.2/−0.1
Carrier Tape width	W	18.0	+1.0/−0.5
Adhesive tape width	W0	6.0	±0.5
Tape feed hole location	W1	9.0	±0.5
Adhesive tape position	W2	1.0 MAX	
Center of feed hole to bottom of component	H	19.5	±1
Center of feed hole to lead form	H0	16.0	±0.5
Component height	H1	27.0 max	
Tape feed hole diameter	D0	4.0	±0.2