



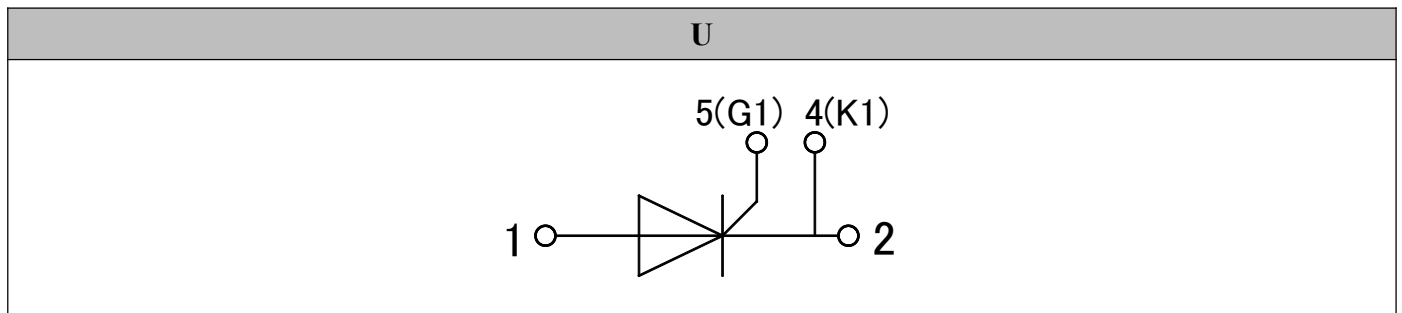
Applications

- Power Converters
- Lighting Control
- DC Motor Control and Drives
- Heat and temperature control

Features

- International standard package
- High Surge Capability
- Simple Mounting

Internal Circuit



Blocking - Off State

TYPE	V _{DRM} /V _{RRM}	V _{DSM} /V _{RSM}	Units
MT500U12BI5	1200	1400	V
MT500U14BI5	1400	1600	V
MT500U16BI5	1600	1800	V
MT500U18BI5	1800	2000	V

Maximum Ratings

Symbol	Conditions	Values	Units
I _{TAV}	Sine 180°;T _c =85℃	500	A
I _{TSM}	T _{VJ} =125℃ t=10ms, sine	14500	A
I ² t	T _{VJ} =125℃ t=10ms, sine	1051000	A ² s
Visol	a.c.50HZ;r.m.s.;1min,I _{iso} :2mA(MAX)	2500	V
T _{vj}		-40 to 125	℃
T _{stg}		-40 to 125	℃
M _t	To terminals(M10)	12±15%	Nm
M _s	To heatsink(M6)	6±15%	Nm
di/dt	T _{VJ} = T _{VJM} , V _{DM} ≤2/3V _{DRM} , I _{GM} =1.5A t _r ≤1.5μs	100	A/μs
dv/dt	T _{VJ} = T _{VJM} , 2/3V _{DRM} , linear voltage rise	1000	V/μs
Weight	Module(Approximately)	780	g

Thermal Characteristics

Symbol	Conditions	Values	Units
R _{th(j-c)}	per chip	0.071	℃/W
R _{th(c-h)}	per chip	0.04	℃/W



Electrical Characteristics

Symbol	Conditions	Values			Units
		Min.	Typ.	Max.	
V_{TM}	$T=25^{\circ}\text{C}$ $I_{TM}=1500\text{A}$			1.5	V
I_{RRM}/I_{DRM}	$T_{VJ}=T_{VJM}$, $V=V_{RRM}$, $V=V_{DRM}$			45	mA
V_{TO}	$T_{VJ}=T_{VJM}$			0.78	V
r_T	$T_{VJ}=T_{VJM}$			0.28	m Ω
V_{GT}	$T_{VJ}=25^{\circ}\text{C}$, $V_D=12\text{V}$, $R_L=3\ \Omega$	0.8		2.5	V
I_{GT}	$T_{VJ}=25^{\circ}\text{C}$, $V_D=12\text{V}$, $R_L=3\ \Omega$	30		150	mA
I_L	$T_{VJ}=25^{\circ}\text{C}$, $V_D=12\text{V}$, $R_L=3\ \Omega$			1000	mA
I_H	$T_{VJ}=25^{\circ}\text{C}$, $V_D=12\text{V}$, $R_L=3\ \Omega$	20		150	mA
V_{GD}	$T_{VJ}=T_{VJM}$, $V_{DM}=67\%V_{DRM}$	0.2			V

Performance Curves

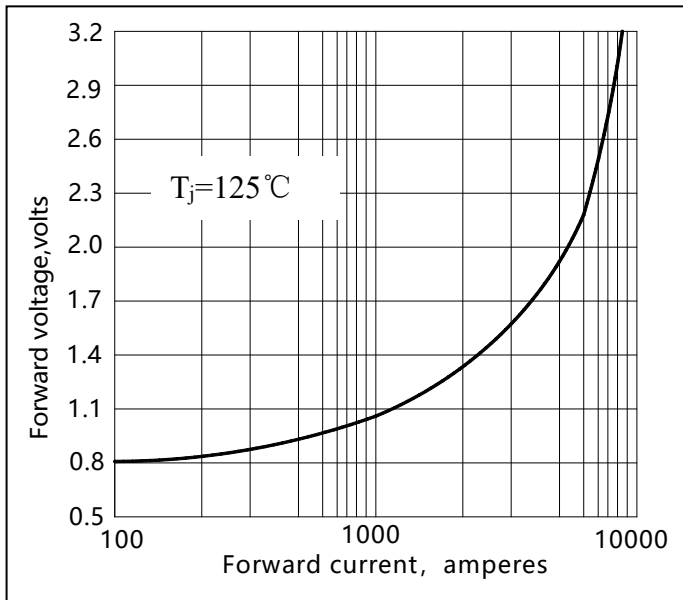


Fig1. Peak On-state Voltage Vs Peak On-state

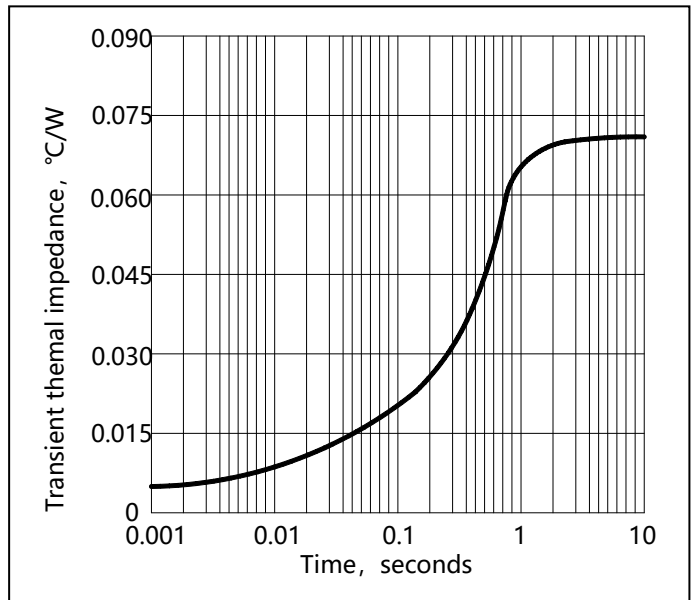


Fig2. Max. junction To case Thermal Impedance Vs Time

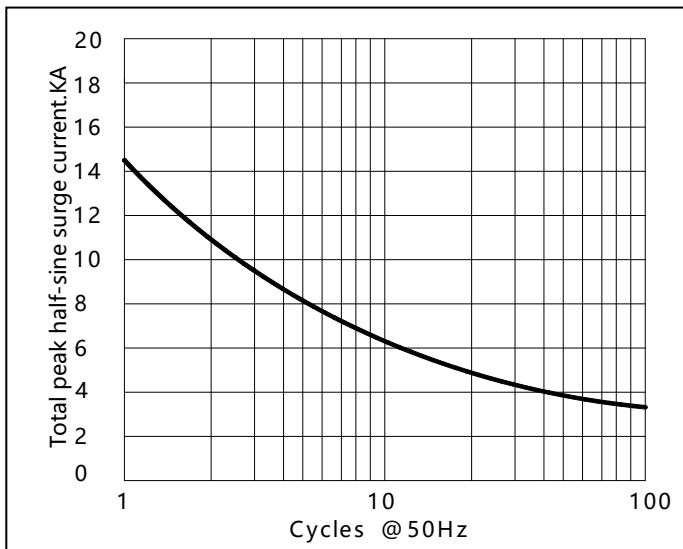


Fig3. Surge Current Vs Cycles

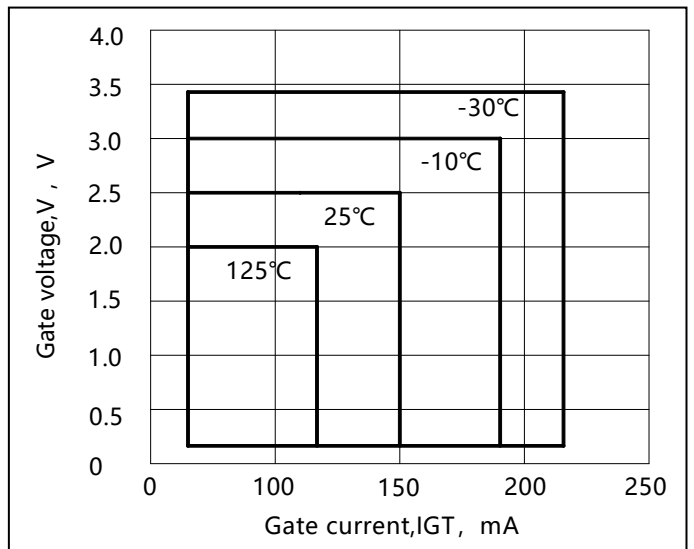


Fig4. Gate Trigger Zone Vs temperature

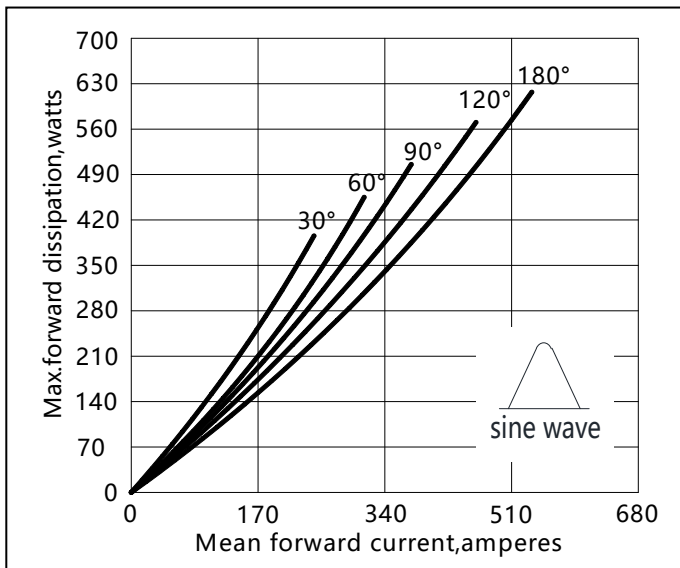


Fig5. Max. Power Dissipation Vs Mean On-state Current

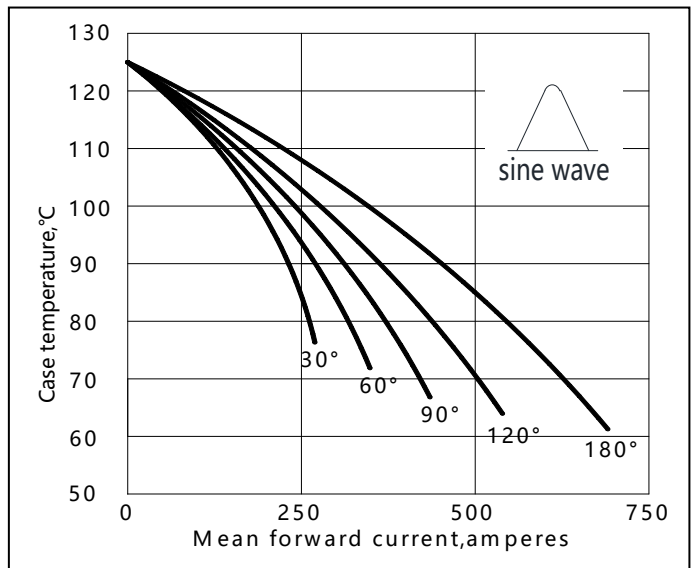
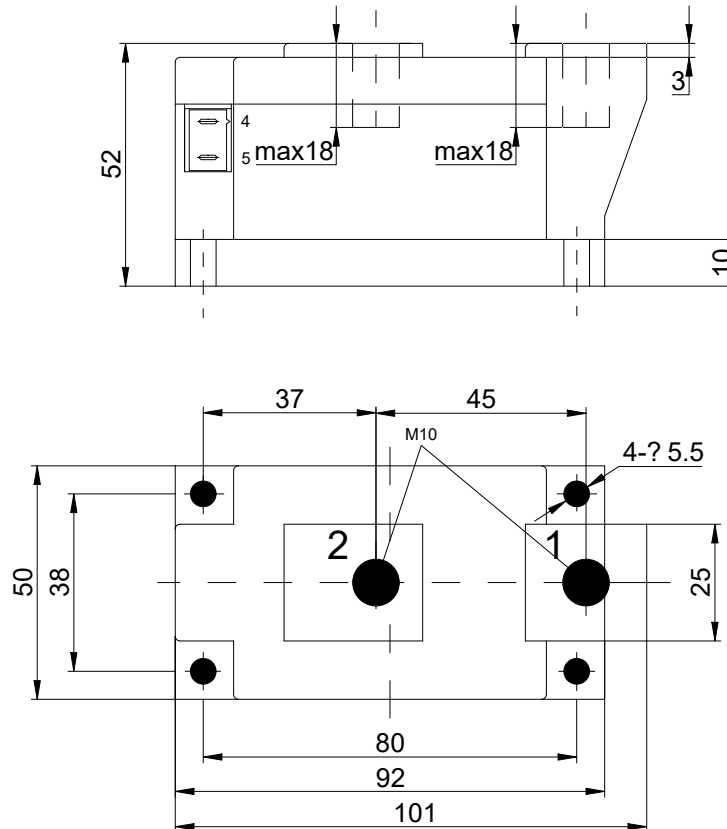


Fig6. Max case Temperature Vs Mean On-state Current

Package Outline Information

CASE:BI5



Dimensions in mm

Unmarked dimensional tolerance: $\pm 0.5\text{mm}$



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