MDST200-16

Three Phase Bridge

Reverse Voltage - 1600 Volts
Forward Current - 200 Amperes

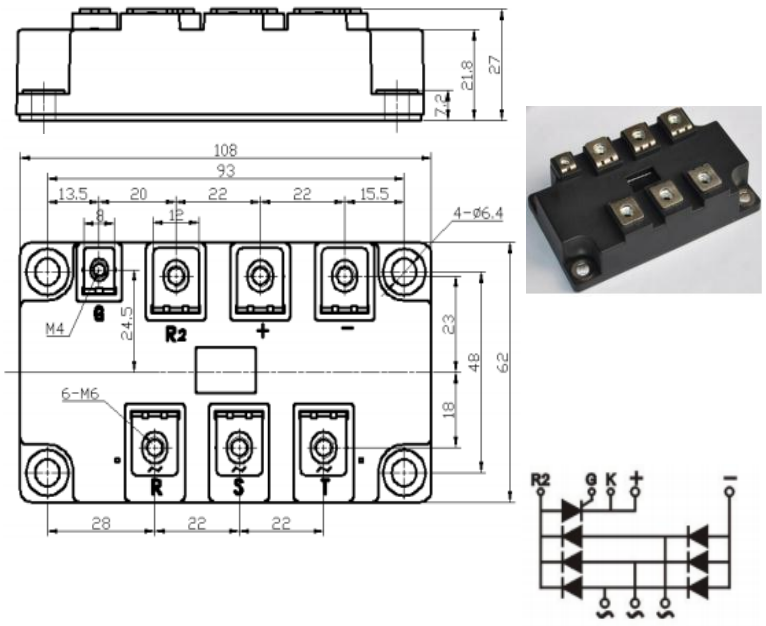
Features

- Blocking voltage:1600V
- Three Phase Bridge and a Thyristor
- Isolated Module package

Applications

- Inverter for AC or DC motor control
- Current stabilized power supply
- Switching power supply

- Note: Products with logo HY® or HY® are made by HY Electronic (Cayman) Limited.



Package Outline Dimensions in Millimeters

Maximum Ratings and Electrical Characteristics

Rating at 25℃ ambient temperature unless otherwise specified.

Single phase, half wave, 60Hz, resistive or inductive load.

For capacitive load, derate current by 20%.

TYPE	VRRM	VRSM
MDST200-16	1600V	1700V

Characteristics	Symbol	Item	Values			Unit
Three phase, full wave Tc=100℃	ID	Output Current(D.C.)	200			A
t=10mS Tvj =45℃	I_{FSM}	Surge forward current	2240			A
t=10mS Tvj =45℃	I^2t	Circuit Fusing Consideration	25080			A^2s
a.c.50HZ;r.m.s.;1min	Visol	Isolation Breakdown Voltage(R.M.S)	3000			V
	Tvj	Operating Junction Temperature	-40 to + 150			℃
	Tstg	Storage Temperature	-40 to + 125			
To terminals(M4) To terminals(M6)	Mt	Mounting Torque	2±15% 5±15%			Nm
To heatsink(M6)	Ms		5±15%			Nm
	Weight	Module (Approximately)	360			g
Junction to Case	Rth(j-c)	Thermal Impedance, max	0.12			℃/W
Case to Heatsink	Rth(c-s)	Thermal Impedance, max	0.10			℃/W
T=25℃ IF=200A	V_{FM}	Forward Voltage Drop, max	Min	Typ	Max	
			/	/	1.45	V
Tvj =25℃,V_{RD}=V_{RRM} Tvj =150℃,V_{RD}=V_{RRM}	I_{RD}	Repetitive Peak Reverse Current, max	/	/	0.1 9	mA

Rating and Characteristic Curves

MDST200-16

Characteristics	Symbol	Item	Values			Unit
Tc=90℃,Single Phase half wave 180^0 conduction	I_{TAV}	Average On-State Current	200			A
Tvj =45℃ t=10mS(50Hz),, sine VR=0	I_{TSM}	Surge On-State Current	1900			A
	I^2t	Circuit Fusing Consideration	18050			A^2S
a.c.50HZ;r.m.s.;1min	Visol	Isolation Breakdown Voltage(R.M.S)	3000			V
	Tvj	Operating Junction Temperature	-40 to + 150			℃
	Tstg	Storage Temperature	-40 to + 150			℃
$T_{VJ}=T_{VJM}$,V_D=1/2V_{DRM}, I_G=100mA d_{iG}/dt=0.1A/us	di/dt	Critical Rate of Rise of On-State Current	150			A/us
$T_{VJ}=T_{VJM}$,V_D=2/3V_{DRM},linear voltage rise	dv/dt	Critical Rate of Rise of Off-State Voltage, min	500			V/us
Junction to Case	Rth(j-c)	Thermal Impedance, max	0.14			℃/W
Case to Heatsink	Rth(c-s)	Thermal Impedance, max	0.10			℃/W
T=25℃ I_T=200A	V_{TM}	Peak On-State Voltage, max.	Min.	Typ	Max	
			/	/	1.65	V
$T_{VJ}=T_{VJM}$,$V_R=V_{RRM}$,$V_D=V_{DRM}$	I_{RRM}/I_{DRM}	Repetitive Peak Reverse Current, max /Repetitive Peak Off-State Current,max	/	/	30	mA
$T_{VJ}=T_{VJM}$	V_{TO}	Threshold voltage	/	/	0.9	V
	Rt	Slope resistance, max	/	/	2	mΩ
T_{VJ}=25℃,V_D=6V	V_{GT}	Gate Trigger Voltage, max	/	/	3	V
T_{VJ}=25℃,V_D=6V	I_{GT}	Gate Trigger current, max	/	/	150	m A
T_{VJ}=125℃,V_D=2/3V_{DRM}	V_{GD}	Required DC gate voltage , max	/	/	0.25	V
T_{VJ}=125℃,V_D=2/3V_{DRM}	I_{GD}	Required DC gate current , max	/	/	6	mA
T_{VJ}=25℃,R_G=33Ω	I_L	Latching current, max	/	300	600	mA
T_{VJ}=25℃,V_D=6V	I_H	Holding current, max	/	150	250	mA
T_{VJ}=25℃	tgd	Gate controlled delay time	1			us
$T_{VJ}=T_{VJM}$	tq	Circuit commutated turn-off time	100			us

Performance Curves

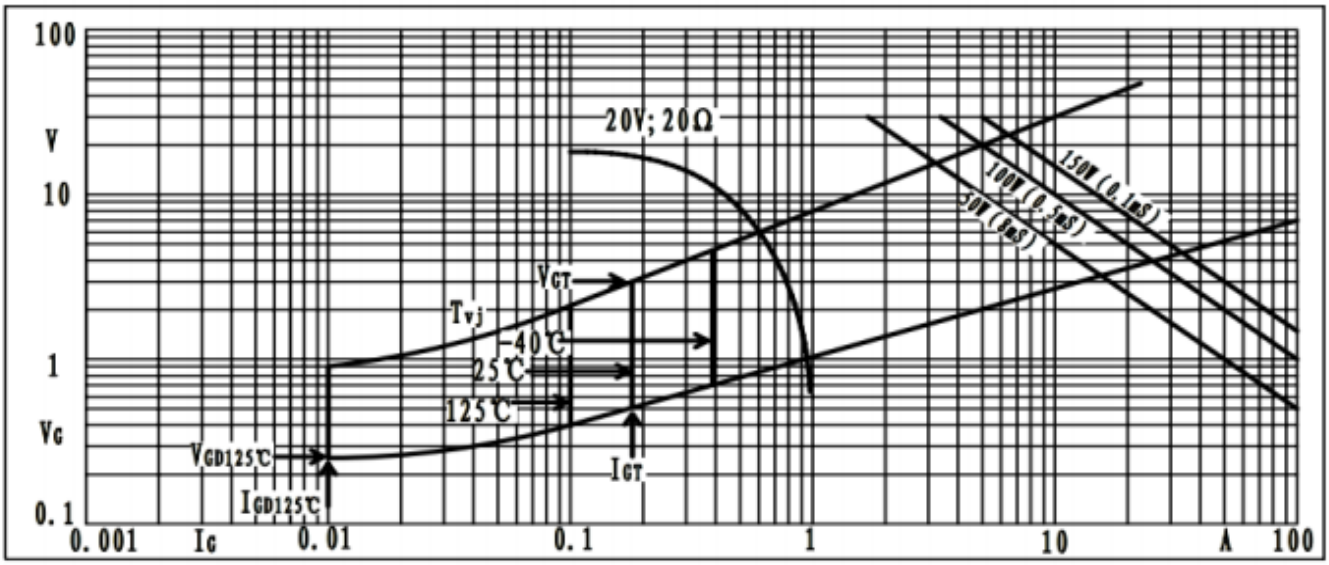


Fig1. Gate trigger characteristics

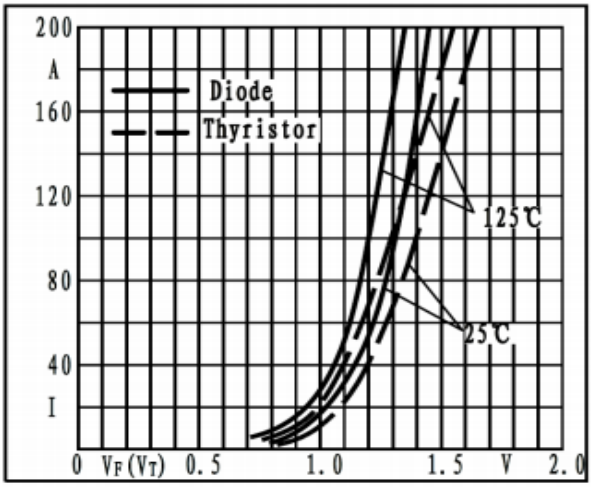


Fig2. Forward characteristics

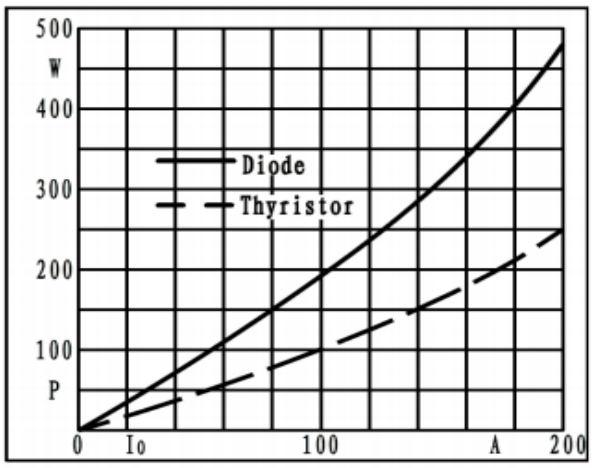


Fig3. Power dissipation

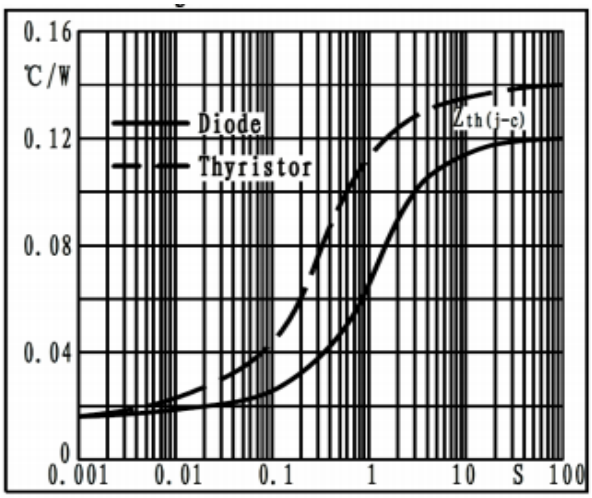


Fig4. Transient thermal impedance

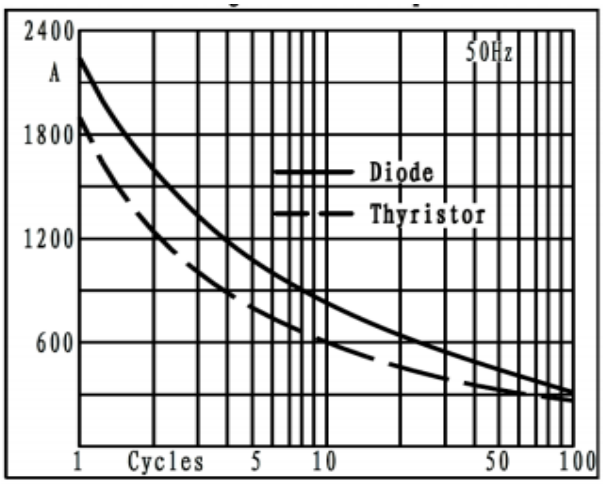


Fig5. Max non-repetitive forward surge current

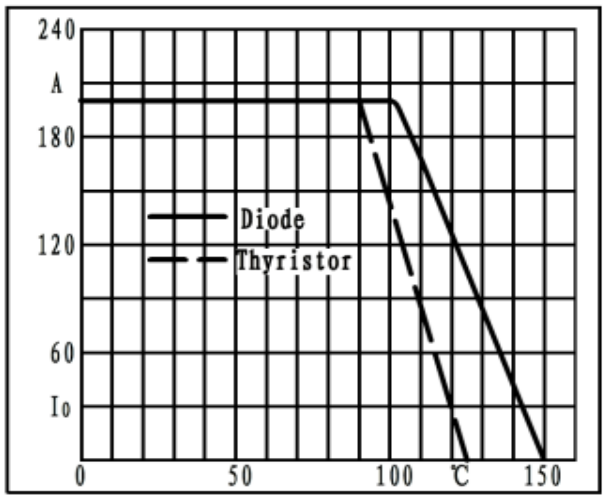


Fig6. Forward current derating curve

The curve above is for reference only.

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