

Thyristor-Thyristor Module, 250 Amps

Features

- Improved glass passivation for high reliability
- Exceptional stability at high temperatures
- High di/dt and dv/dt capabilities
- Low thermal resistance

**Voltage Ratings** ($T_A = 25^\circ\text{C}$, unless otherwise noted)

Type number	Voltage Code	V_{RRM} , Maximum repetitive peak reverse voltage (V)	V_{RSM} , Maximum non-repetitive peak reverse voltage (V)	V_{DRM} , Maximum repetitive peak off-state voltage (V)	I_{RRM} , Maximum reverse leakage current @ T_{JMAX} (mA)
NTT250 H	200	2000	2100	2000	max. 80
	220	2200	2300	2200	

Electrical Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Values	Units
Maximum average forward current @ $T_J = 85^\circ\text{C}$	$I_{T(AV)}$	250	A
Maximum average RMS forward current	$I_{T(RMS)}$	390	A
Maximum non-repetitive surge current	I_{TSM}	9000	A
Maximum I^2t for fusing	I^2t	405000	A^2s
Forward voltage drop	V_{TM}	max. 1.4	V
Critical rate of rise of on-state current	di/dt	max. 250	$\text{A}/\mu\text{s}$
Critical rate of rise of off-state voltage	dv/dt	max. 1000	$\text{V}/\mu\text{s}$
Gate current required to trigger	I_{GT}	min. 200	mA
Gate voltage required to trigger	V_{GT}	min. 3	V
Holding current	I_H	min. 150	mA
Latching current	I_L	min. 300	mA
Isolation voltage (for 1 Min.)	V_{ISO}	4000	V

Thermal & Mechanical Specifications ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Values	Units
Operating junction temperature range	T_J	-40 to +130	$^\circ\text{C}$
Storage temperature	T_{stg}	-40 to +130	$^\circ\text{C}$
Thermal resistance, junction to case	$R_{th(jc)}$	0.14	$^\circ\text{C}/\text{W}$
Mounting torque	to heatsink	$5 \pm 15\%$	Nm
	to terminals	$8 \pm 15\%$	
Weight	W	620	g

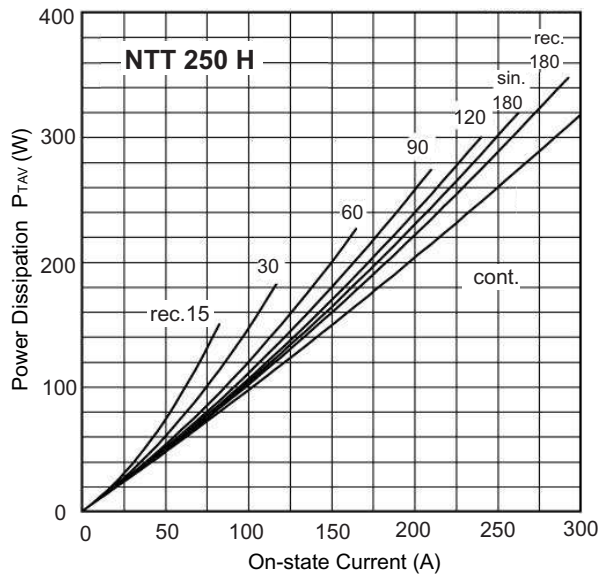


Fig. 1 Power dissipation per thyristor vs. on-state current

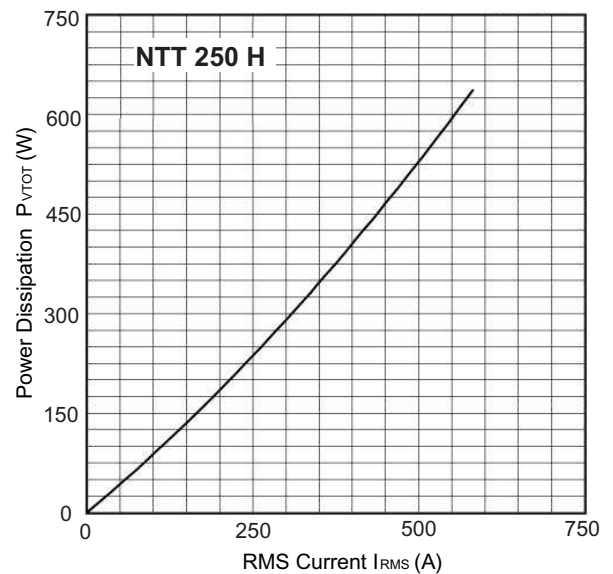


Fig. 2 Power dissipation per module vs. rms current

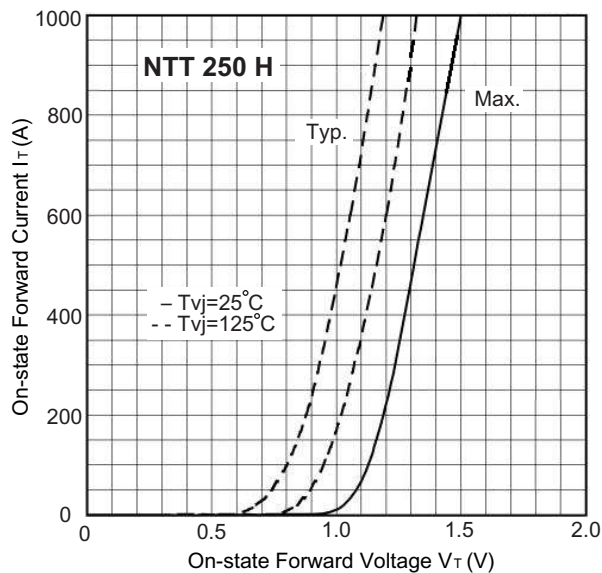


Fig. 3 On-state characteristics

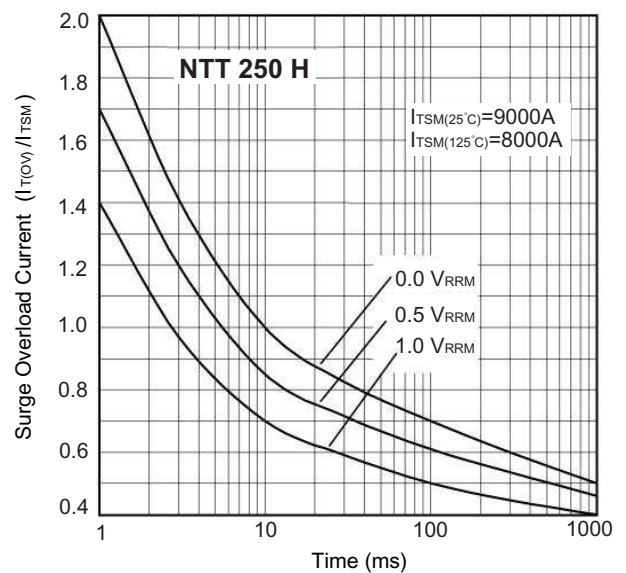


Fig. 4 Surge overload current vs. time

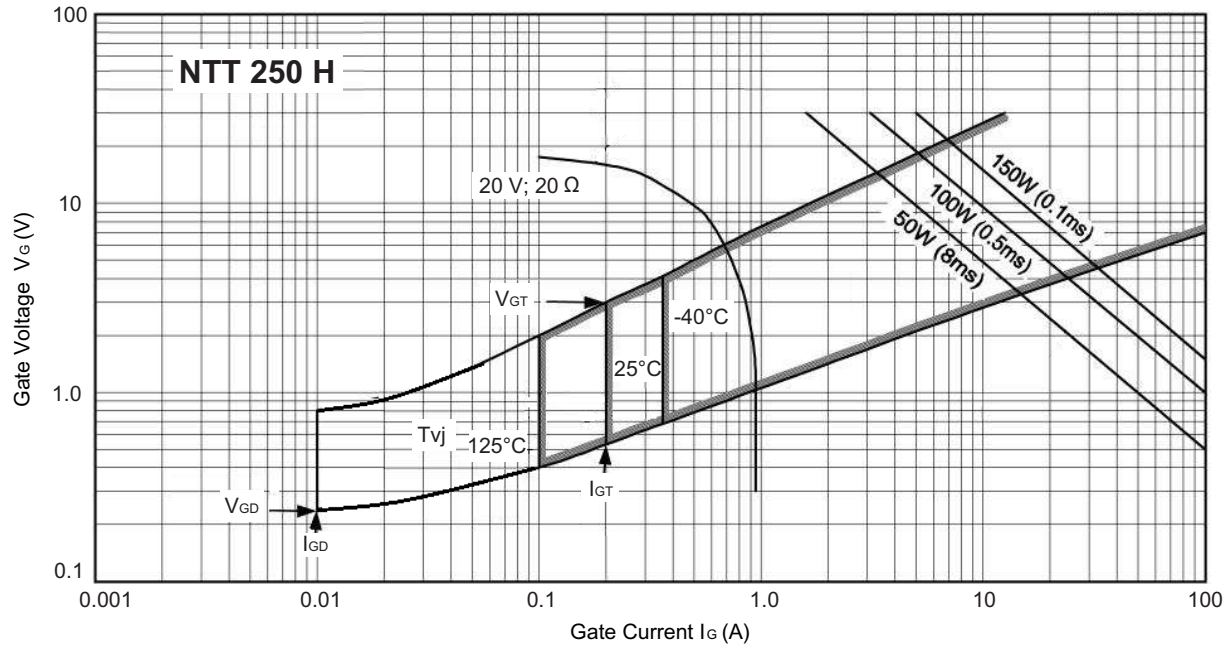
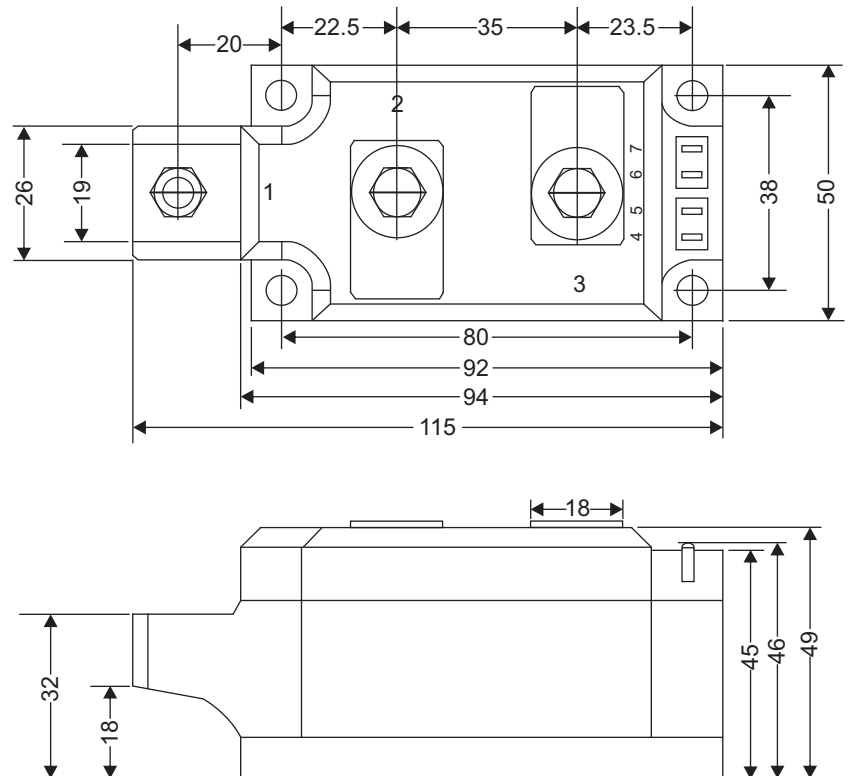


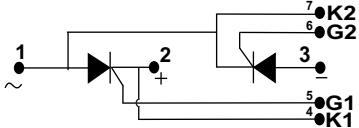
Fig. 5 Gate trigger characteristics

Package Outline

(All dimensions in mm)



Circuit Configuration

Circuit Description	Configuration Code	Circuit Drawing
Series Connection (doubler circuit)	N	

Ordering Table

NTT	250	N	220	H
1	2	3	4	5

1 – Power Module

- > DD = Diode-Diode
- > TD = Thyristor-Diode
- > TT = Thyristor-Thyristor

2 – Current Rating $I_{T(AV)}$

3 – Circuit Configuration (see Table)

4 – Voltage Code (see Voltage Ratings table)

5 – Isolation Voltage

- > None = 3000V, 1 min.
- > H = 4000V, 1 min.