THREE PHASE THYRISTOR MODULE

Features

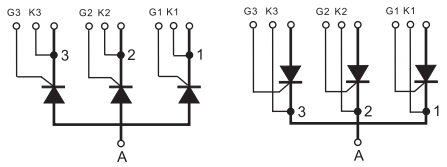
1. NK3T100..(R) series thyristor modules are desinged for 3 phase rectification
2. Voltage rating up to 600V
3. High surge capability

Ordering code

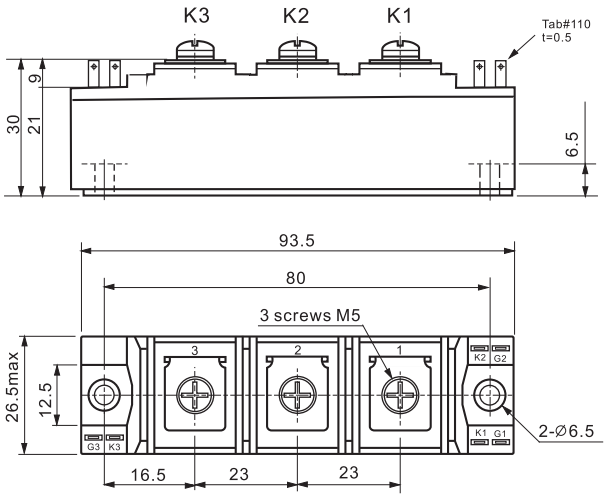
NK3T	100	/	06	R
(1)	(2)		(3)	(4)

(1) For Three Phase Thyristor modules
(2) Maximum average on-state current , A
(3) Voltage code , V (code x 10 = / V_{RRM})
(4) Blank - for common cathode to base plate
R- for common anode to base plate

Circuit Configurations



NK3T NK3T..(R)



All dimensions in millimeters(inches)

Electrical Characteristics

Symbol	Parameter	Condition	Max. Value	Unit
$I_{T(AV)}$	Max. Average on-state current	180° half sine wave , 50 Hz T_C=85°C	100	A
$I_{T(RMS)}$	Max. R.M.S. on-state current	T_C=85°C	126	A
V_{RRM} V_{DRM}	Max. repetitive peak reverse voltage	t_p=10 ms , T_j = T_j max. V_{DSM} & V_{RSM} = V_{DRM} & V_{RRM} x 1.1	200 to 600	V
I_{RRM} I_{DRM}	Repetitive peak reverse current	V_R = V_{RRM}	8	mA
I_{TSM}	Max. peak, one-cycle,on-state non-repetitive surge current	10 ms duration V_R = 0.6 V_{RRM}	3400	A
I^2t	Max. Permissible surge energy		58.9	KA^2S
V_{TM}	Max. Forward voltage drop	I_{TM} = 240A	1.35	V
$V_{T(TO)}$	Value of threshold voltage		1.4	V
r_t	On-state slope resistance		1.75	mΩ
I_{GT}	Max. Required DC gate current to trigger	V_A=12V , I_A=1A	100	mA
V_{GT}	Max. Required DC gate voltage to trigger		2.0	V
I_H	Max. Holding current		100	mA
V_{GD}	Max. Gate voltage which will not trigger any devices	At 67% V_{DRM}	0.20	V
$d_{v/dt}$	Critical rate of rise of off-state voltage	V_{DM} = 0.67 V_{DRM}	800	V/μs
$d_{i/dt}$	Max. Rate of rise of turned-on current	Gate drive 20V , 20 Ω , t_r ≤0.5μs	100	A/μs
T_{stg}	Storage temperature range		-40 to 150	°C
$R_{th(JC)}$	Max. Thermal resistance		0.25	°C/ W
W_t	Approximate weight		340	g
T	Busbar to module (M 5)	A mounting compound is recommened. Torque should be rechecked after a period of 3 hours.	20	Kgf-cm
	Module to heatsink (M 6)		30	Kgf-cm

Fig.1
Peak on-state voltage Vs. Peak on-state current

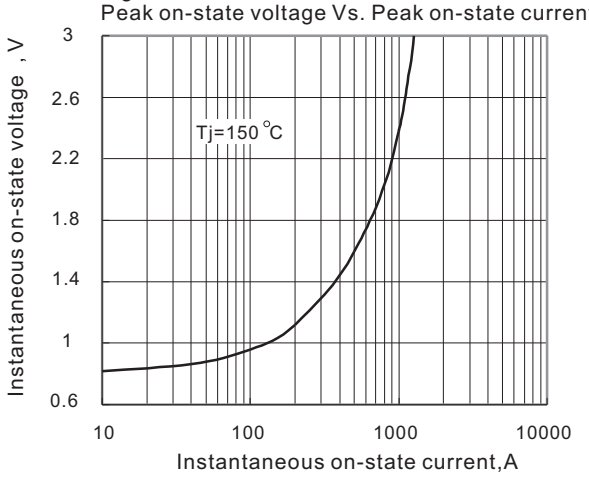


Fig.2
Max.junction to case thermal impedance Vs. Time

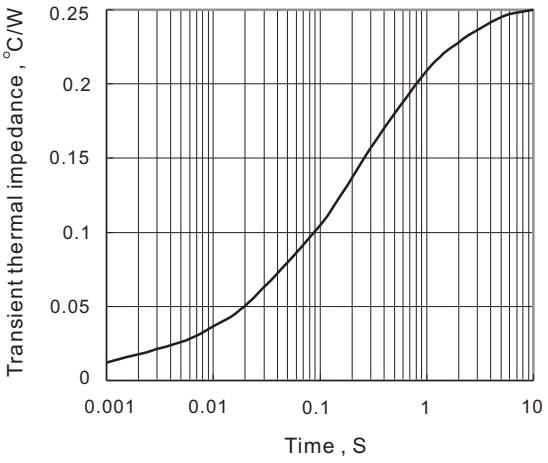


Fig.3
Max.power dissipation Vs. Mean on-state current

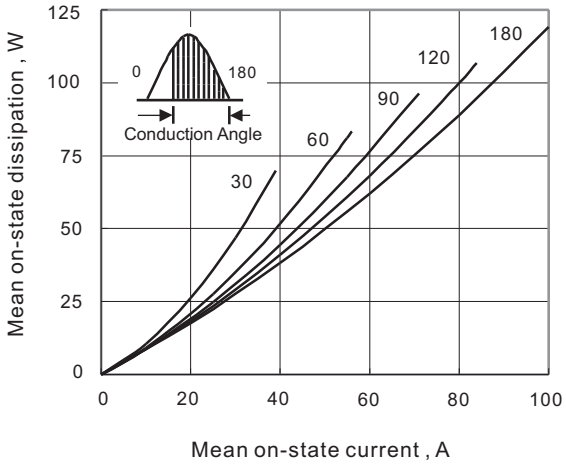


Fig.4
Max.case temperature Vs. Mean on-state current

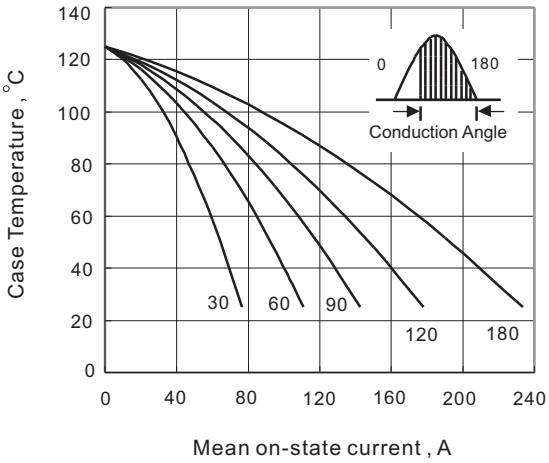


Fig.5
Max.power dissipation Vs. Mean on-state current

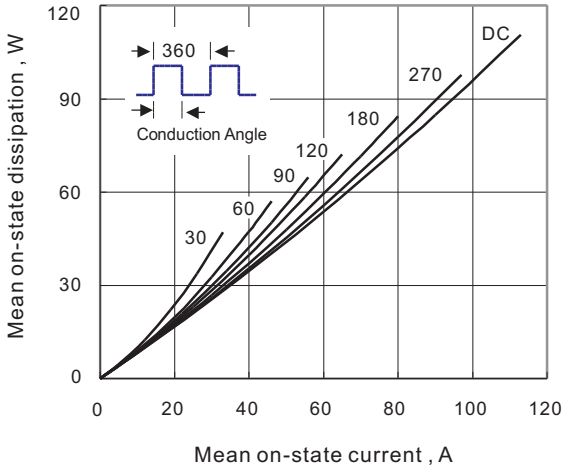


Fig.6
Max.case temperature Vs. Mean on-state current