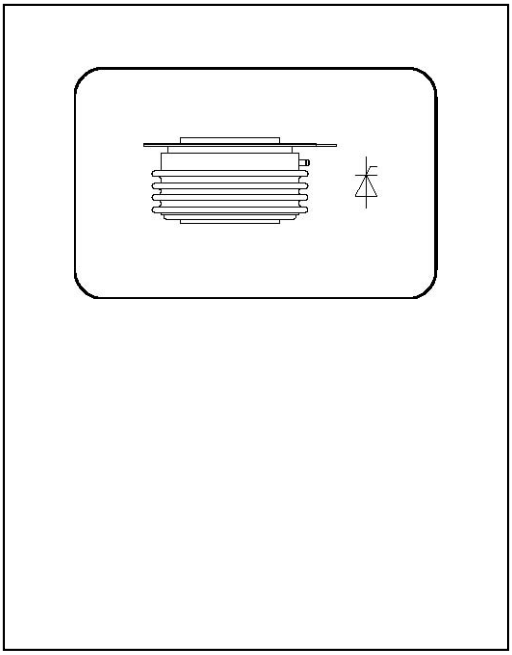
INRN2000C.. Series

PHASE CONTROL THYRISTORS **Stud Version**



Features

- Hermetic ceramic -metal seal
- high dv/dt
- High surge capability
- Tested according to IEC standards
- Types up to 2000V V_{RRM}

Typical Applications

- AC controllers
- Battery charges
- DC motor controls
- Power supplies
- Controlled DC power supplies
- Machine tool controls
- Welding

Major Ratings and Characteristics

Parameters		**INRN2000C..**	**Units**
$I_{T(AV)}$		2000	A
	@ T_C	75	°C
$I_{T(RMS)}$		3100	A
I_{TSM}	@ 50Hz	25000	A
	@ 60Hz	26500	A
I^2t	@ 50Hz	3125	KA^2s
	@ 60Hz	3050	KA^2s
V_{DRM} /V_{RRM}		400 to 2000	V
Tq	typical	200	µs
T_J	range	- 40 to 125	°C

INRN2000C.. Series

ELECTRICAL SPECIFICATIONS

符号	参数	测试条件	结温 Tj(° C)	参数值			单位
				最小	典型	最大	
IT(AV)	通态平均电流	180° 正弦半波, 50Hz 双面散热, Ths=56° C	125			2000	A
IT(AV)	通态平均电流	180° 正弦半波, 50Hz 双面散热, Ths=55° C	125			2010	A
VDRM VRRM	断态重复峰值电压反向重复峰值电压	VDRM&VRRM tp=10ms VDSM&VRSM= VDRM&VRRM+100V	125	400		1000	V
IDRM IRRM	断态重复峰值电流反向重复峰值电流	VDM= VDRM VRM= VRRM	125			120	mA
ITSM	通态不重复浪涌电流	10ms底宽, 正弦半波,	125			25	KA
I2t	浪涌电流平方时间积	VR=0.6VRRM				3125	A2s*103
VTO	门槛电压		125			0.95	V
rT	斜率电阻					0.16	mΩ
VTM	通态峰值电压	ITM=4000A, F=28KN	25			1.80	V
dv/dt	断态电压临界上升率	VDM=0.67VDRM	125			300	V/μs
di/dt	通态电流临界上升率	VDM= 67%VDRM to 1500A, 门极脉冲 tr ≤0.5μs IGM=1.5A重复值	125			200	A/μs
Irm	反向恢复电流	ITM=1500A, tp=1000μs,					A
trr	反向恢复时间	di/dt=-20A/μs,	125				μs
Qrr	恢复电荷	Vr=50V					μC
IGT	门极触发电流			40		300	mA
VGT	门极触发电压	VA=12V, IA=1A	25	0.8		3.0	V
IH	维持电流			20		300	mA
VGD	门极不触发电压	VDM=67%VDRM	125			0.3	V
$R_{th(j-h)}$	热阻抗(结至散热器)	180° 正弦波, 双面散热压紧力 28KN				0.020	° C /W
Fm	安装力			21		30	KN
Tstg	贮存温度			-40		140	° C
Wt	质量				650		g
Outline	KT54cT60						

Voltage Ratings

Type number	Voltage Code	V_{RRM}, maximum repetitive peak reverse voltage V	V_{RSM}, maximum non-repetitive peak reverse voltage V	I_{RRM} max. @ $T_J = T_J$ max. mA
INRN2000C..	04	400	500	30.00
	08	800	900	
	12	1200	1300	
	14	1400	1500	
	16	1600	1700	
	18	1800	1900	
	20	2000	2100	

Switching

	Parameter	INRN2000C..	Units	Conditions
di/dt	ax. non-repetitive rate of rise of turned-on current	800	A/µs	Gate drive 20V, 20Ω, $t_r \leq 1\mu s$ $T_J = T_J$ max, anode voltage ≤ 80% V_{DRM}
t_d	ical delay time	1.0	µs	Gate current 1A, di_g/dt = 1A/µs V_d = 0.67% V_{DRM}, T_J = 25°C
Tq	pical turn-off time	200	µs	I_{TM} = 350A, $T_J = T_J$ max, di/dt = 20A/µs, V_R = 50V dv/dt = 20V/µs, Gate 0V 100Ω, t_p = 500µs

Blocking

	Parameter	INRN2000C..	Units	Conditions
dv/dt	Maximum critical rate of rise of off-state voltage	400	V/µs	TJ = TJ max linear to 80% rated VDRM
I_{DRM} I_{RRM}	Max. peak reverse and off-state leakage current	20	mA	TJ = TJ max, rated VDRM/VRRM applied

Outline