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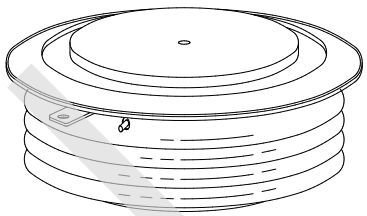
HIGH FREQUENCY THYRISTOR

Features:

- . All Diffused Structure
- . Amplifying Gate Configuration
- . Blocking capability up to 1200 volts
- . High dv/dt Capability
- . Pressure Assembled Device

KT30aT



ELECTRICAL CHARACTERISTICS AND RATINGS

Blocking off-state

Blocking Voltage	V_{RRM} (1)	V_{DRM} (1)	V_{RSM} (1)
1200	1200	1200	1325

V_{RRM} = Repetitive peak reverse voltage
V_{DRM} = Repetitive peak off state voltage
V_{RSM} = Non Repetitive peak reverse voltage(2)

Repetitive peak reverse leakage and off state leakage	I_{RRM} / I_{DRM}	10 mA 30 mA (3)
Critical rate of voltage rise	dv/dt (4)	800 V/μsec

Notes:
(1) All voltage ratings are specified for an applied 50Hz/60zHz sinusoidal waveform over the temperature range -40 to +125 °C
(2) 10 msec. Max. Pulse width
(3) Maximum value for Tj=125 °C.
(4) Minimum value for linear and exponential waveshape to 67% rated V_{DRM}. Gate open, Tj=125 °C
(5) Non repetitive value
(6) The value of di/dt is established in accordance with EIA/NIMA Standard RS-397, Section5-2-2-6.

Conducting on-state

Parameter	Symbol	Min.	Max.	Typ.	Units	Conditions
Average on-state current	$I_{T(AV)}$		200		A	Sinewave,180° conduction, Tc=65°C
RMS on-state current	I_{TRMS}		314		A	
Peak one cycle surge (non repetitive) current	I_{TSM}		5400		A	10 msec (50Hz), sinusoidal wave-shape, 180° conduction, T_j = 125
I square t	I^2t		140000		A^2s	10 msec
Latching current	I_L		200		mA	V_D=24V; R_L=12ohms
Holding current	I_H		200		mA	V_D=24V; I=2.5A
Peak on-state voltage	V_{TM}		3.2		V	I_{TM}= 640A;Tj =25°C
Critical rate of rise of on-state current(5,6)	di/dt		800		A/μs	Non repetitive
Critical rate of rise of on-state current(5)	di/dt		400		A/μs	Repetitive

Gating

Parameter	Symbol	Min.	Max.	Typ.	Units	Conditions
Peak gate power dissipation	P_{GM}		200		W	t_p = 40 us
Average gate power dissipation	$P_{G(AV)}$		5		W	
Gate trigger current	I_{GT}		300		mA	V_D =6V; R_L =3 ohms;T_j = -40 °C
			200		mA	V_D =6V; R_L =3 ohms;T_j = +25 °C
			125		mA	V_D =6 V; R_L =3 ohms;T_j=+125°C
Gate trigger voltage	V_{GT}		5		V	V_D =6V; R_L =3 ohms;T_j = -40 °C
			3		V	V_D =6V; R_L =3 ohms;T_j = 0-125°C
		0.30			V	V_D =Rated V_{DRM}; R_L =1000ohms; T_j = + 125 °C
Gate reverse repetitive voltage	V_{GRM}		5		V	

Switching

Parameter	Symbol	Min.	Max.	Typ.	Units	Conditions
Turn-on time	t_{gt}		1.2	0.7	μs	I_{TM} = 50 A; V_D = 67% V_{DRM} Gate pulse: V_G =30V; R_G=10ohms; t_r = 0.1 μs; t_p = 20 μs
Turn-off time (V_R=-5V)	t_q	10	20	15	μs	I_{TM}>500A; di/dt=25A/μs; V_R≥-5V; Re-applied d_V/d_t=30V/μs linear to 67%V_{DRM}; T_j = 125 °C; Duty cycle≥ 0.01%
Reverse recovery current	I_{rr}				A	I_{TM} > 500 A; di/dt = 50 A/μs; V_R≥ -50 V; T_j = 125 °C

THERMAL AND MECHANICAL CHARACTERISTICS AND RATINGS

Parameter	Symbol	Min.	Max.	Typ.	Units	Conditions
Operating temperature	T_j	-40	+125		°C	
Storage temperature	T_{stg}	-40	+140		°C	
Thermal resistance-junction to case	$R_{\Theta(j\text{-}c)}$		0.06		°C/W	Double sided cooled
Thermal resistance - case to heatsink	$R_{\Theta(c\text{-}s)}$		0.03		°C/W	Double sided cooled
Mounting force	P		10		kN	
Weight	W			0.08	kg	

* **Mounting surfaces smooth, flat and greased**