



HIGH POWER TRIAC**Features:**

- . Enlarged gate structure
- . Same silicon wafer contains two thyristors
- . Blocking capability up to 6500 volts
- . High power capability
- . Full cold pressing encapsulation

TS5D

**ELECTRICAL CHARACTERISTICS AND RATINGS****Blocking-Off State**

Device No.	V _{DRM} (1)	V _{DSM} (1)
KS175/58	5800	5900
KS175/60	6000	6100
KS175/62	6200	6300
KS175/65	6500	6600

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

Repetitive peak reverse leakage and off state leakage	I _{DRM}	5 mA 100 mA (3)
Off - state voltage rise rating	dV/dt (4)	1000 V/sec (min)

Notes:

All ratings are specified for T_j=25 °C unless otherwise stated.

(1) All voltage ratings are specified for an applied 50Hz/60Hz sinusoidal waveform over the temperature range 0 to +125 °C

(2) 10 msec. Max. Pulse width

(3) Maximum value for T_j=125 °C.(4) Minimum value for linear and exponential waveshape to 67% rated V_{DRM}. Gate open, T_j=125 °C

(5) The value of di/dt is established in accordance with EIA/NIMA Standard JB/T 8950.2-2013.

Conducting-on state

Parameter	Symbol	Min.	Max.	Typ.	Units	Conditions
Average value of on-state current	I _{T(AV)}		175		A	Sinewave, 180° conduction, T _c =70°C
RMS value of on-state current	I _{TRMS}		275		A	Nominal value
Peak one cycle surge (non repetitive) current	I _{TSM}		1925		A	10.0 msec (50Hz), sinusoidal wave-shape, 180° conduction, T _j = 125 °C
I square t	I ² t		19x10 ³		A ² s	10 msec
Latching current	I _L		700		mA	V _D = 12 V; R _L = 12 ohms
Holding current	I _H		200		mA	V _D = 12 V; I = 2.5 A
Peak on-state voltage	V _{TM}		2.9		V	I _{TM} =300A; T _j = 25°C
Threshold Voltage	V _{TO}		1.85		V	T _j =125°C
Slope resistance	r _T		3.5		mΩ	200A to 500A
Critical rate of rise of on-state current(5)	di/dt		100		A/μs	repetition
Commutator voltage rise rate rating	dV/dt			500	A/μs	T _j =125°C; VR≤0.67V _{DRM}

Gating

Parameter	Symbol	Min.	Max.	Typ.	Units	Conditions
Peak gate power dissipation	P_{GM}		200		W	
Average gate power dissipation	$P_{G(AV)}$		5		W	
Gate trigger current	I_{GT}		150		mA	$V_D=12V; R_L=30\Omega; T_j=+25^\circ C$
Gate trigger voltage	V_{GT}	0.8	2.5		V	$V_D=12V; R_L=30\Omega; T_j=+25^\circ C$
Peak negative voltage	V_{GRM}		5		V	

Dynamic

Parameter	Symbol	Min.	Max.	Typ.	Units	Conditions
Delay time	t_d		3.0		μs	$I_{FG}=2.0A; V_D=0.4V_{DRM}; t_r=0.5\mu s$
Turn-off time ($V_R=-5V$)	t_q		700		μs	$I_{TM}=175A; di/dt=-10A/\mu s; V_R=100V; dV/dt=30V/\mu s; V_D=67\%V_{DRM}; T_j=125^\circ C$
Reverse recovery current	I_{rr}		1800		μC	$I_{TM}=175A; di/dt=-1A/s; V_R=100V; T_j=125^\circ C$

THERMAL AND MECHANICAL CHARACTERISTICS AND RATINGS

Parameter	Symbol	Min.	Max.	Typ.	Units	Conditions
Operating temperature	T_j	-40	+125		$^\circ C$	
Storage temperature	T_{stg}	-40	+140		$^\circ C$	
Thermal resistance- junction to case	$R_{\theta(j-c)}$		0.080		$^\circ C/W$	Double sided cooled
Thermal resistance - case to heatsink	$R_{\theta(c-s)}$		0.015		$^\circ C/W$	Double sided cooled
Mounting force	P	12	15	14	kN	
Weight	W			0.4	kg.	

* Mounting surfaces smooth, flat and greased

