

# KP640-POWER THYRISTOR

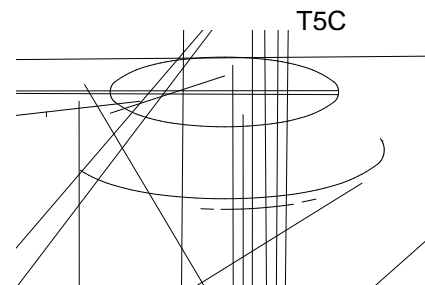
2600-3000  $V_{DRM}$

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## HIGH POWER THYRISTOR FOR PHASE CONTROL APPLICATIONS

### Features:

- . All Diffused Structure
- . Amplifying Gate Configuration
- . Blocking capability up to 3000 volts
- . High dv/dt Capability
- . Pressure Assembled Device



## ELECTRICAL CHARACTERISTICS AND RATINGS

### Blocking - Off State

Device Type	$V_{RRM}$ (1)	$V_{DRM}$ (1)	$V_{RSM}$ (1)
KP640/26	2600	2600	2800
KP640/28	2800	2800	3000
KP640/30	3000	3000	3100

$V_{RRM}$  = 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	$I_{RRM}/I_{DRM}$	2 mA 45 mA (3)
Critical rate of voltage rise	dv/dt (4)	1000 V/

### Conducting - On State

## ELECTRICAL CHARACTERISTICS AND RATINGS

## KP640-POWER THYRISTOR

### Gating

Parameter	Symbol	Min.	Max.	Typ.	Units	Conditions
Peak gate power dissipation	$P_{GM}$		20		W	
Average gate power dissipation	$P_{G(AV)}$		4		W	
Gate-trigger current	$I_{GT}$		150		mA	$V_D = 12\text{ V}; R_L = 3\text{ ohms}; T_j = +25\text{ }^\circ\text{C}$
Gate- trigger voltage	$V_{GT}$	0.7	2.5		V	$V_D = 12\text{ V}; R_L = 3\text{ ohms}; T_j = +25\text{ }^\circ\text{C}$
Peak negative voltage	$V_{GRM}$		5		V	

### Dynamic

Parameter	Symbol	Min.	Max.	Typ.	Units	Conditions
Delay time	$t_d$		3.0	2.5	s	$I_{TM}=100\text{A}; V_D=67\%V_{DRM}$ $V_G=30\text{V}; R_G=10\text{ohms};$ $t_r=0.1\text{ s}; t_p=20\text{ s}$
Turn-off time (with $V_R = -5\text{ V}$ )	$t_q$			300	s	$I_{TM} = 500\text{A}; di/dt = -10\text{A/ s};$ $V_R = 100\text{V}; dv/dt=30\text{V/ s};$ $V_D=67\%V_{DRM}; T_j=125$
Reverse recovery charge	$Q_{rr}$				C	$I_{TM}=500\text{A } di/dt=-10\text{A/ s};$ $V_R=100\text{V}; T_j=125$

## THERMAL AND MECHANICAL CHARACTERISTICS AND RATINGS

Parameter	Symbol	Min.	Max.	Typ.	Units	Conditions
Operating temperature	$T_j$	-40	+125		$^\circ\text{C}$	
Storage temperature	$T_{stg}$	-40	+140		$^\circ\text{C}$	
Thermal resistance - junction to case	$R_{(j-c)}$		0.039		$^\circ\text{C/W}$	Double sided cooled
Thermal resistance - case to heatsink	$R_{(c-s)}$		0.008		$^\circ\text{C/W}$	Double sided cooled
Mounting force	F	14	16	15	kN	
Weight	m			0.26	kg	

\* Mounting surfaces smooth, flat and greass



