

KG500A-D

HIGH FREQUENCY THYRISTOR



Features

- Interdigitated amplifying gates
- Fast turn-on and high di/dt
- Short turn-off time and low switching losses
- Hermetic metal cases with ceramic insulators

Application

- Inductive heating
- Electronic welders
- Self-commutated inverters
- AC motor speed control
- General power switching applications

$I_{T(AV)}$	500A
V_{DRM}/V_{RRM}	800-1400 V
t_q	8~12 μ s
I_{TSM}	3.6KA

Symb.		parameter	Test Conditions	T_J ($^{\circ}$ C)	Value	Unit	
Current Ratings	$I_{T(AV)}$	average on-state current	180°half sine wave 50Hz Double side cooled $T_{hs}=55^{\circ}$ C	50Hz	115	500	
			180°half sine wave 50Hz Double side cooled $T_{hs}=55^{\circ}$ C	6KHz		500	
	I_{TSM}	Surge on-state current	10ms half sine wave $V_R=0.6V_{RRM}$		115	3.6	KA
	I^2t	I^2t for fusing coordination			115	65	KA ² S
Characteristics	V_{DRM} V_{RRM}	Repetitive peak off-state voltage Repetitive peak reverse voltage	V_{DRM} & V_{RRM} tp=10ms V_{DSM} & $V_{RSM}=V_{DRM}$ & $V_{RRM}+100V$	115	800-1400	V	
	I_{DRM} I_{RRM}	Repetitive peak current	$V_{DM}=V_{DRM}$ $V_{RM}=V_{RRM}$	115	Max.40	mA	
	V_{TO}	Threshold voltage		115	Max.1.50	V	
	V_{TM}	Peak on-state voltage	$I_{TM}=900A, F=15KN$	25	Max.3.2	V	
	r_T	On-state slop resistance		115	Max.0.88	m Ω	
	I_H	Holding current	$V_A=12V, I_A=1A$	25	20-400	ma	
Dynamic Parameters	dv/dt	Critical rate of rise of off-state voltage	$V_{DM}=67\%V_{DRM}$	115	Max.200	V/ μ s	
	di/dt	Critical rate of rise of on-state current	$V_{DM}=67\%V_{DRM}$ to 1000A, Gate pulse $t_r \leq 0.5\mu s, I_{GM}=1.5A$	115	Max.200	A/ μ s	
	t_q	Circuit commutated turn-off time	$I_{TM}=800A, tp=1000\mu s,$ $V_R=50V, di/dt=-20A/\mu s$		8-12	μ s	
	I_{rm}	Reserse recovery current	$T_M=800A, tp=1000\mu s, V_R=50V$	115	Typ.36		
	t_{rr}	Reverse recovery time	dv/dt=30V/ μ s, di/dt=-20A/ μ s	115	Typ.2.5	μ s	

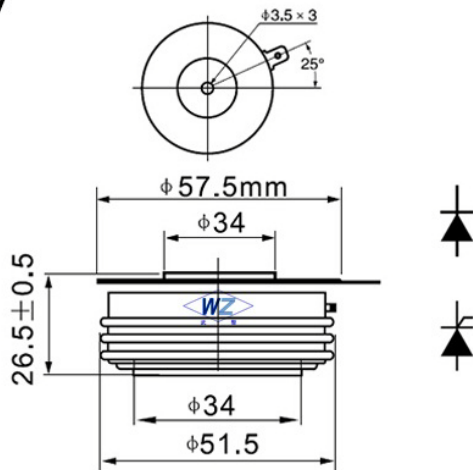
	Q_{rr}	Recovery charge		115	Typ.45 Max.60	μc
Gate Parameters	I_{GT}	Gate trigger current	$V_A=12V, I_A=1A$	25	30-250	mA
	V_{GT}	Gate trigger voltage		25	0.8-3.0	V
	V_{GD}	Non-trigger gate voltage	$V_{DM}=67\% V_{DRM}$	115	Min.0.3	V

Thermal & Mechanical Date

Symb.	parameter	Test Conditions	Value	Unit
$R_{th(j-h)}$	Thermal resistance Junction to heat sink	Double side cooled, mounting force 15KN	0.035	$^{\circ}C/W$
F_m	Mounting force		10-20	KN
T_{stg}	Stored temperature		-40-+140	$^{\circ}C$
W_t	Weight		270	g

Dimensions:

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