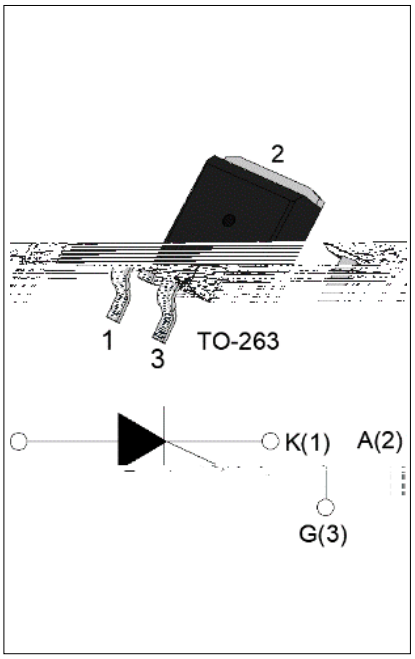
JCT812EH 12A SCR Rev.A.1.1

DESCRIPTION:

With high ability to withstand the shock loading of large current, JCT812EH SCR provides high dV/dt rate with strong resistance to electromagnetic interference. It is especially recommended for use on solid state relay, motorcycle, power charger, T-tools etc. Package TO-263 is RoHS compliant.



MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	12	A
V_{DRM}/V_{RRM}	800	V
I_{GT}	15	mA

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Storage junction temperature range	T_{stg}	-40-150	
Operating junction temperature range	T_j	-40-150	
Repetitive peak off-state voltage (T_j=25)	V_{DRM}	800	V
Repetitive peak reverse voltage (T_j=25)	V_{RRM}	800	V
Average on-state current (T_C 0 133)	$I_{T(AV)}$	7.6	A
RMS on-state current (T_C 01 33)	$I_{T(RMS)}$	12	A
Non repetitive surge peak on-state current (t_p=10ms, T_j=25)	I_{TSM}	140	A
Non repetitive surge peak on-state current (t_p=8.3ms, T_j=25)		154	
I^2t value for fusing (t_p=10ms , T_j=25)	I^2t	98	A^2s
Critical rate of rise of on-state current (I_G=2× I_{GT}, f=100Hz , T_j=150)	dI/dt	150	A s
Peak gate current (t_p=20 s , T_j=150)	I_{GM}	4	A
Average gate power dissipation (T_j=150)	$P_{G(AV)}$	1	W

Peak gate power	P_{GM}	10	W
Peak pulse voltage (T_j=25 ; non-repetitive,off-state;FIG.8)	V_{pp}	0.5	kV

ELECTRICAL CHARACTERISTICS (T_j=25 unless otherwise specified)

Symbol	Test Condition	Value			Unit
		MIN.	TYP.	MAX.	
I_{GT}	V_D=12V R_L=33	-	-	15	mA
V_{GT}		-	-	1	V
V_{GD}	V_D=V_{DRM} T_j=150 R $_L$=3.3k	0.2	-	-	V
I_L	I_G=1.2I_{GT}	-	-	60	mA
I_H	I_T=500mA	-	-	50	mA
dV/dt	V_D=540V Gate Open T_j=125	1800	-	-	V s
	V_D=540V Gate Open T_j=150	900	-	-	
t_{on}	I_G=20mA I_A=200mA I_R=20mA T_j=25	-	5	-	s
t_{off}		-	80	-	

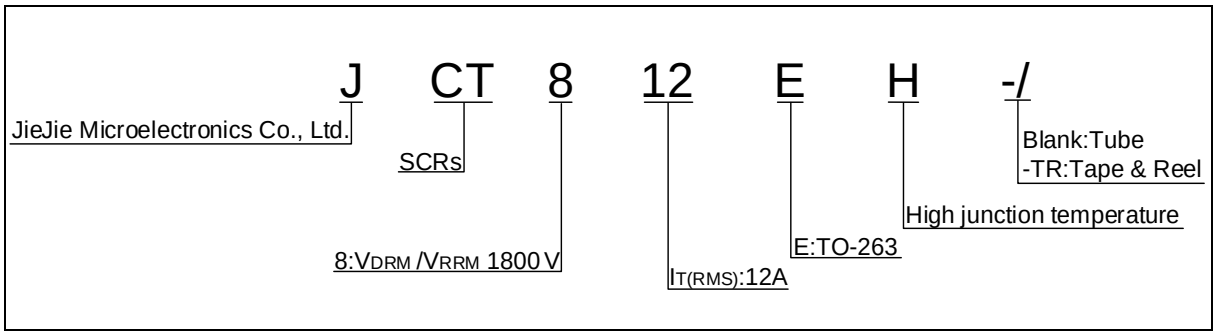
STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX.)	Unit
V_{TM}	I_{TM}=24A t_p=380 s	T_j=25	1.5	V
V_{TO}	Threshold voltage	T_j=150	0.74	V
R_D	Dynamic resistance	T_j=150	28	P
I_{DRM}	V_D=V_{DRM} V_R=V_{RRM}	T_j=25	5	A
I_{RRM}		T_j=150	1.2	mA

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	junction to case (DC)	1.1	/W
$R_{th(j-a)}$	junction to ambient (DC, in free air, S=1cm^2)	60	/W

ORDERING INFORMATION



MARKING

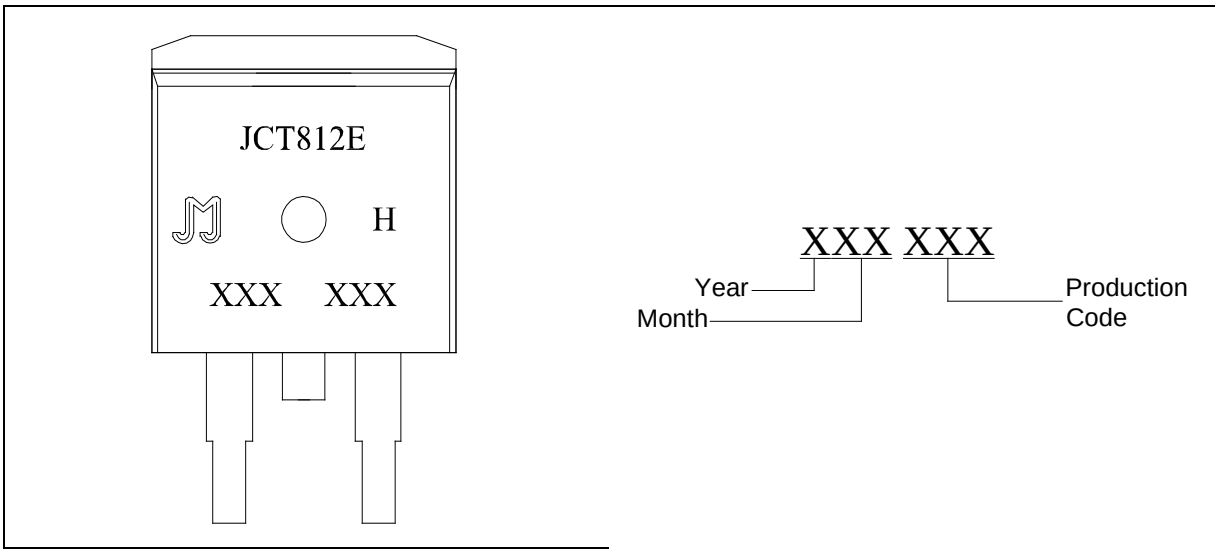


FIG.1: Maximum power dissipation versus RMS on-state current

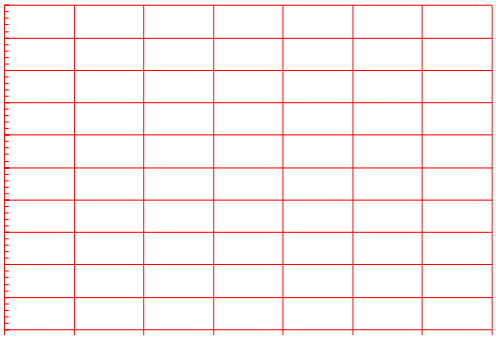
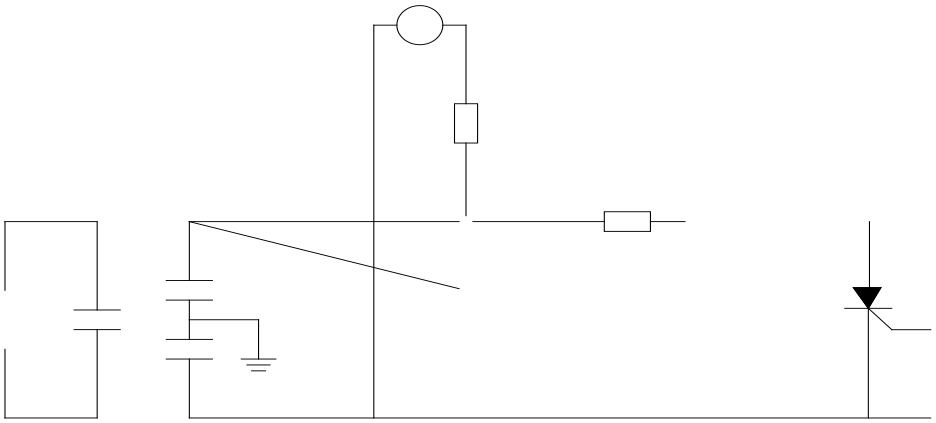


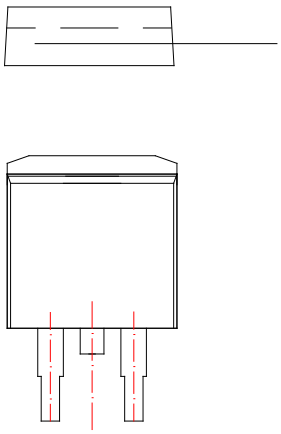
FIG.2: RMS on-state current versus case temperature

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FIG.8: Test circuit for inductive and resistive loads to IEC-61000-4-5 standards.



PACKAGE MECHANICAL DATA



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	9.90		10.20	0.390		0.402
B	14.70		15.80	0.579		0.622
C	9.40		9.60	0.370		0.378
D	2.40			0.094		
E	1.20		1.50	0.047		0.059
F	0.75		0.85	0.029		0.033