



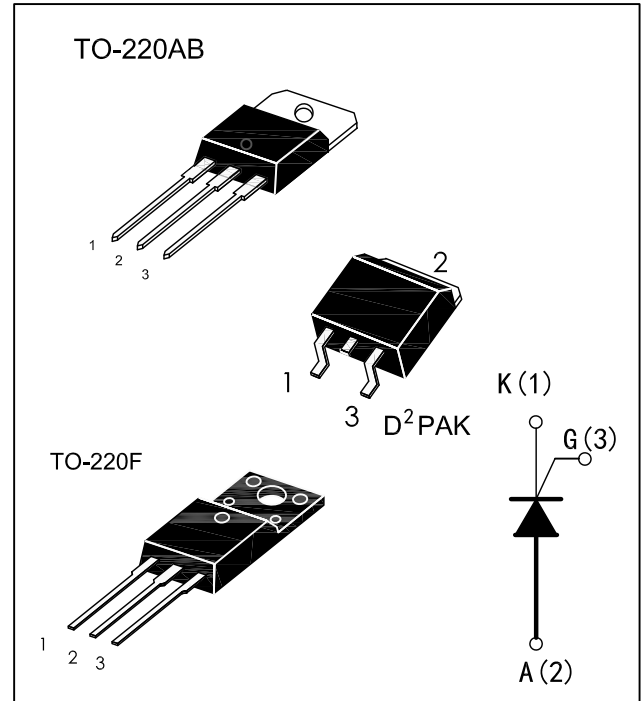
JCT625 Series 25A SCRs

DESCRIPTION:

High current density due to singel mesa technology.
 JCT625 series of silicon controlled rectifiers are specifically designed for medium power switching and phase control applications.
 JCT625 series are suitable for general purpose applications, a high gate sensitivity is required.
 JCT625F are full pack plastic package,they provides a 2500V RMS isolation voltage from all three terminals to external heatsink.

MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	25	A
IGT	≤ 15	mA
V_{TM}	≤ 1.6	V



ABSOLUTE MAXIMUM RATINGS

Parameter		Symbol	Value	Unit
Storage junction temperature range		Tstg	-40 to +150	°C
Operrating junction temperature range		Tj	-40 to +125	°C
Repetitive Peak Off-state Voltage Tj=25°C		VDRM	600	V
Repetitive Peak Reverse Voltage Tj=25°C		VRRM	600	
RMS on-state current (all conduction angels)	D²PAK Tc=97°C	IT(RMS)	25	A
	TO-220AB Tc=100°C			
	TO-220F Tc=69°C			
Average on-state current (half sine wave)	D²PAK Tc=97°C	IT(AV)	16	A
	TO-220AB Tc=100°C			
	TO-220F Tc=69°C			
Non repetitive surge peak on-state current (half sine cycle, Tj=25°C)	f = 50 Hz t=10ms	ITSM	300	A
	f = 60 Hz t=8.3ms		314	
I²t Value for fusing	tp=10ms	I²t	450	A²s
Repetitive rate of rise of on-state current after triggering ITM=20A IG=50mA dIa/dt 50mA/ms		dI _r /dt	50	A/μs
Peak gate current	tp=20us, Tj=125°C	IGM	4	A
Peak gate power	tp=20us, Tj=125°C	PGM	5	W
Average gate power dissipation	Tj=125°C	PG(AV)	1	W

ELECTRICAL CHARACTERISTICS($T_j=25^\circ\text{C}$ unless otherwise specified)

Symbol	Test Condition	JCT625			Unit
		MIN.	TYP.	MAX.	
I_{GT}	$V_D=12\text{V}$ $R_L=33\Omega$	-	6	15	mA
V_{GT}		-	0.7	1.5	V
V_{GD}	$V_D=V_{DRM}$ $R_L=3.3\text{K}\Omega$ $T_j=125^\circ\text{C}$	-	-	0.2	V
I_L	$I_G=1.2I_{GT}$	-	20	40	mA
I_H	$I_T=500\text{mA}$	-	15	20	mA
dV/dt	$V_D=67\%V_{DRM}$ gate open $T_j=125^\circ\text{C}$	700	1000	-	V/ μs

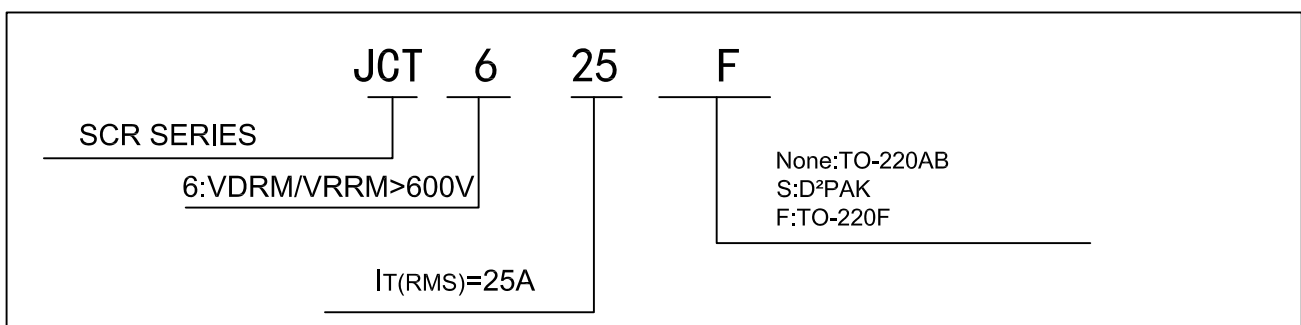
STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX.)	Unit
V_{TM}	$I_{TM}=50\text{A}$, $t_p=380\mu\text{s}$	$T_j=25^\circ\text{C}$	1.6	V
I_{DRM} I_{RRM}	$V_D=V_{DRM}$ $V_R=V_{RRM}$	$T_j=25^\circ\text{C}$	10	μA
		$T_j=125^\circ\text{C}$	1	mA

THERMAL RESISTANCES

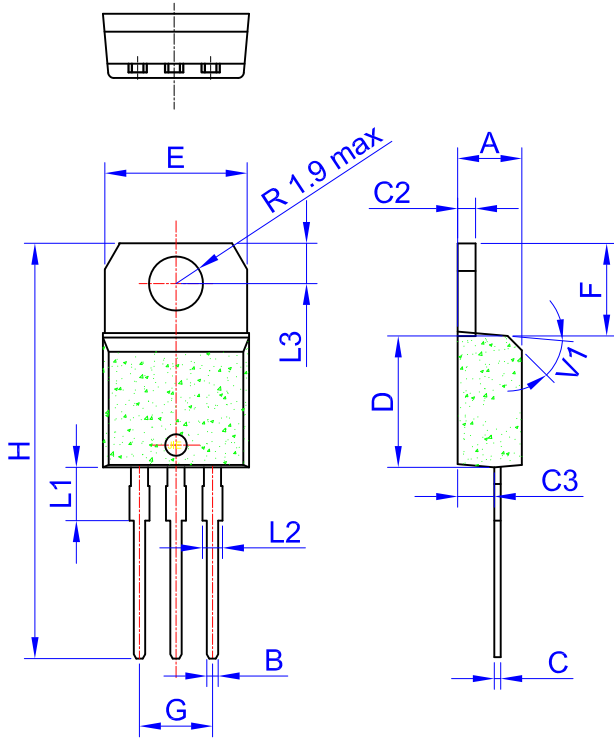
Symbol	Parameter	Value	Unit
$R_{th(j-mb)}$	thermal resistance from junction to mounting base	TO-220AB	1.0
		D ² PAK	1.5
$R_{th(j-hs)}$	thermal resistance from junction to heatsink with heatsink compound	TO-220F	4.0

ORDERING INFORMATION



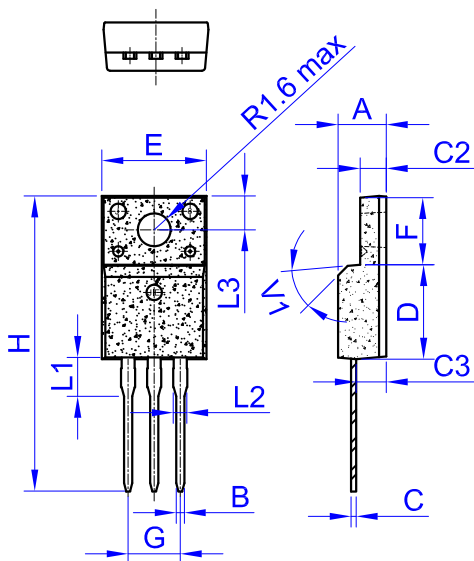
PACKAGE MECHANICAL DATA

TO-220AB



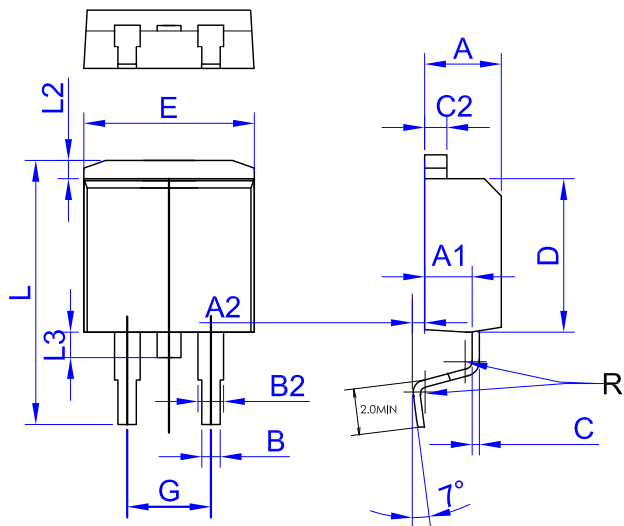
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.4		4.6	0.173		1.181
B	0.61		0.88	0.024		0.034
C	0.49		0.70	0.019		0.027
C2	1.23		1.32	0.048		0.051
C3	2.4		2.72	0.094		0.107
D	8.6		9.7	0.338		0.382
E	10		10.4	0.393		0.409
F	6.2		6.6	0.244		0.259
G	4.8		5.4	0.189		0.213
H	28.0		29.8	11.0		11.7
L1		3.75			0.147	
L2	1.14		1.7	0.044		0.066
L3	2.65		2.95	0.104		0.116
V1		40°			40°	

TO-220F



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.3		4.7	0.169		0.185
B	0.74	0.8	0.83	0.029	0.031	0.033
C	0.5		0.75	0.020		0.030
C2	2.4		2.7	0.094		0.106
C3	2.5		2.9	0.098		0.114
D	8.6		9.2	0.338		0.362
E	9.7		10.3	0.382		0.406
F	6.2		6.6	0.136		0.143
G	5.0		5.2	0.197		0.205
H	28.0		29.8	11.0		11.7
L1		3.63			0.143	
L2	1.14		1.7	0.044		0.067
L3		3.2			0.126	
V1		40°			40°	

PACKAGE MECHANICAL DATA



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.30		4.60	0.169		0.181
A1	2.49		2.69	0.098		0.106
A2	0.03		0.23	0.001		0.009
B	0.70		0.93	0.027		0.037
B2	1.25	1.40		0.048	0.055	
C	0.45		0.60	0.017		0.024
C2	1.21		1.36	0.047		0.054
D	8.95		9.35	0.352		0.368
E	10.0		10.28	0.393		0.405
G	4.88		5.28	0.192		0.208
L	15.0		15.85	0.590		0.624
L2	1.27		1.40	0.050		0.055
L3	1.40		1.75	0.055		0.069
R		0.40			0.016	

FIG.1: Maximum power dissipation versus average on-state current(half cycle)

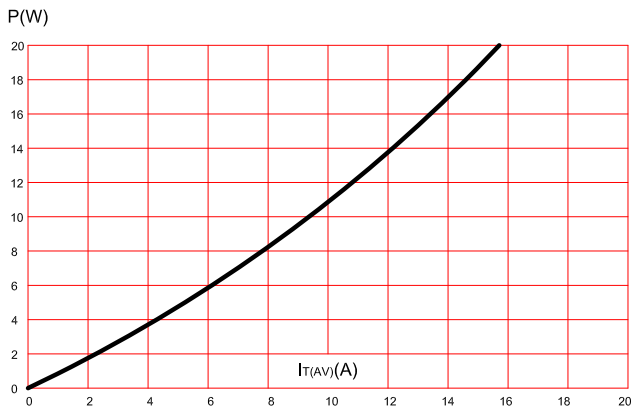


FIG.2: RMS on-state current versus case temperature(full cycle)

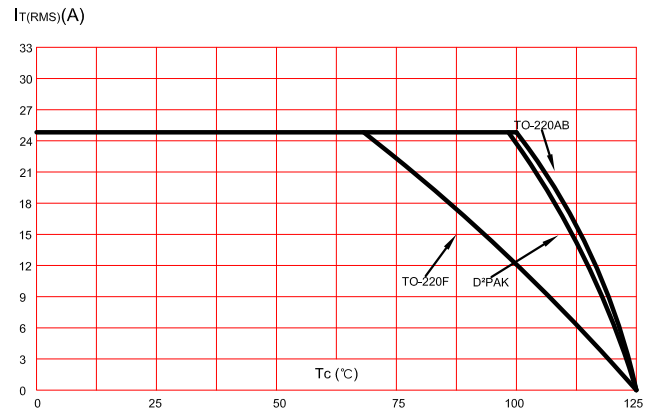


FIG.3: On-state characteristics (maximum values)

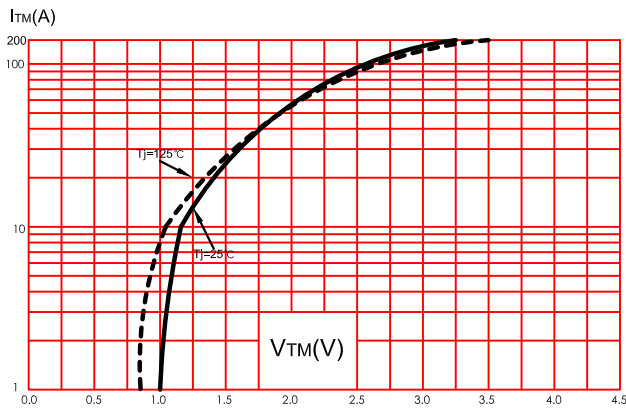


FIG.4: Surge peak on-state current versus number of cycles.

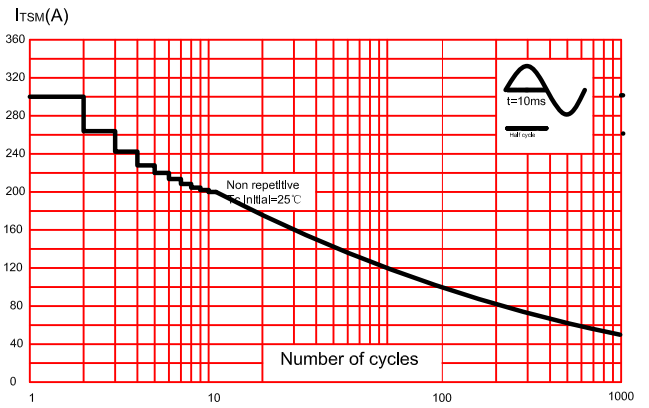


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10ms$, and corresponding value of I^2t .

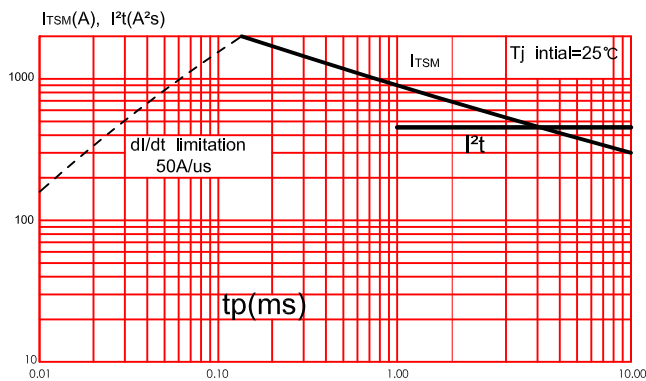


FIG.6: Relative variation of gate trigger current, holding current and latching current versus junction temperature(typical values).

