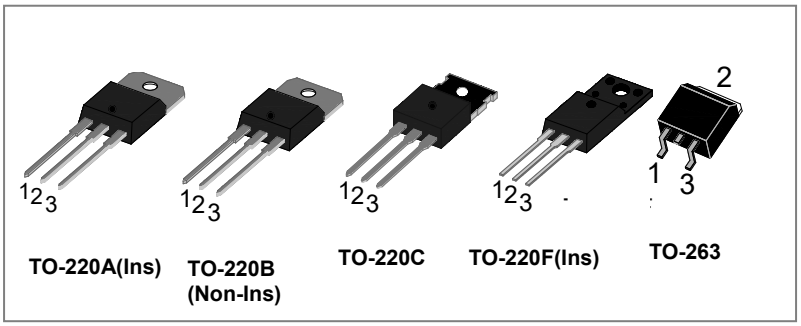
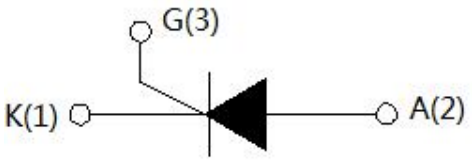
Technical Data
Data Sheet N2326, Rev.A

RoHS

SCT625/SCT825 Series 25A SCRs



Circuit Diagram



With high ability to withstand the shock loading of large current, SCT625/SCT825 SCRs provide high dv/dt rate with strong resistance to electromagnetic interference. They are especially recommended for use on solid state relay, motorcycle, power charger, T-tools etc.

Maximum Ratings:

Characteristics	Symbol	Condition	Max.	Units
Storage junction temperature range	T_{stg}	-	-40-150	℃
Operating junction temperature range	T_j	-	-40-125	℃
Repetitive peak off-state voltage(T_j=25℃)	V_{DRM}	-	600/800	V
Repetitive peak reverse voltage(T_j=25℃)	V_{RRM}	-	600/800	V
Non repetitive surge peak Off-state voltage	V_{DSM}	-	V_{DRM} +100	V
Non repetitive peak reverse voltage	V_{RSM}	-	V_{RRM} +100	V
RMS on-state current	$I_{(TRMS)}$	TO-220A(Ins) TO-220F(Ins)(T_C=85℃)	25	A
		TO-220B(Non-Ins) TO-220C(T_C=100℃)		
		TO-263(T_C=107℃)		
Non repetitive surge peak on-state current (tp=10ms)	I_{TSM}	-	300	A
I^2t value for fusing (tp=10ms)	I^2t	-	450	A^2s
Critical rate of rise of on-state current (I_G=2×I_{GT})	dI/dt	-	50	A/μs
Peak gate current	I_{GM}	-	4	A
Average gate power dissipation	$P_{G(AV)}$	-	1	W
Peak gate power	P_{GM}	-	5	W

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Electrical Characteristics(Tj=25℃ unless otherwise specified)

Symbol	Test Condition	Value			Unit
		MIN.	TYP.	MAX.	
I_{GT}	V_D=12V R_L=33Ω	-	-	40	mA
V_{GT}		-	-	1.3	V
V_{GD}	V_D=V_{DRM} T_j=125℃ R_L=3.3KΩ	0.2	-	-	V
I_L	I_G=1.2I_{GT}	-	-	90	mA
I_H	I_T=500mA	-	-	80	mA
dV/dt	V_D=2/3V_{DRM} Gate Open T_j=125℃	200	-	-	V/μs

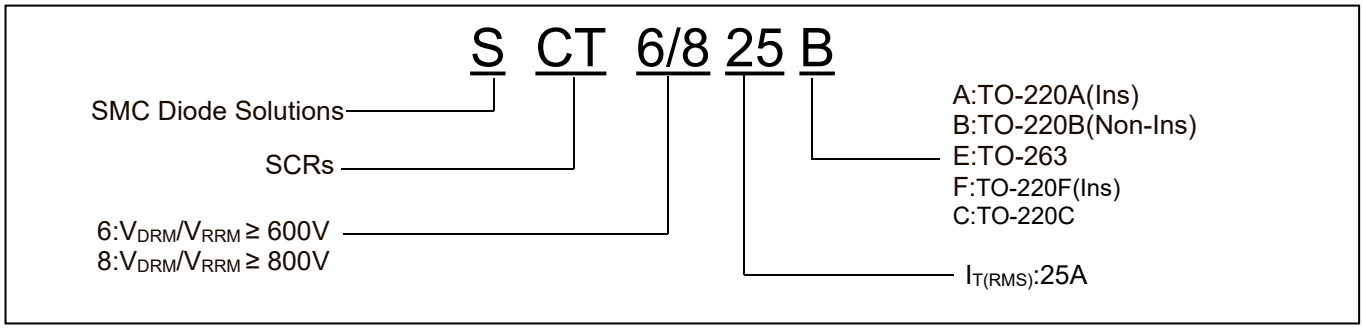
Static Characteristics

Symbol	Condition	Max.	Units
V_{TM}	I_T=50A tp=380μs,Tj=25℃	1.55	V
I_{DRM}	V_D=V_{DRM} V_R=V_{RRM}, Tj=25℃	10	μA
I_{RRM}	V_D=V_{DRM} V_R=V_{RRM}, Tj=125℃	4	mA

Thermal Resistances

Symbol	Condition		Value	Units
Rth(j-c)	Junction to case(AC)	TO-220A(Ins) TO-220F(Ins)	1.7	℃/W
		TO-220B(Non-Ins) TO-220C	1.0	℃/W
		TO-263	1.0	℃/W
Rth(j-a)	Junction to ambient	TO-263	45	℃/W

Ordering Information



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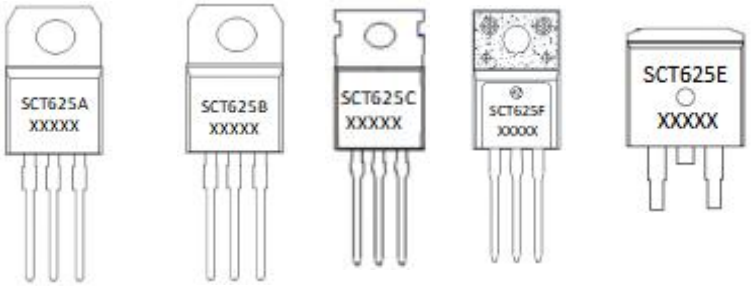
Device	Package	Shipping
SCT625A/SCT825A	TO-220A(Ins)	50pcs/ Tube
SCT625B/SCT825B	TO-220B(Non-Ins)	50pcs/ Tube
SCT625E/SCT825E	TO-263	800pcs/ Tape
SCT625C/SCT825C	TO-220C	50pcs/ Tube
SCT625F/SCT825F	TO-220F(Ins)	50pcs/ Tube

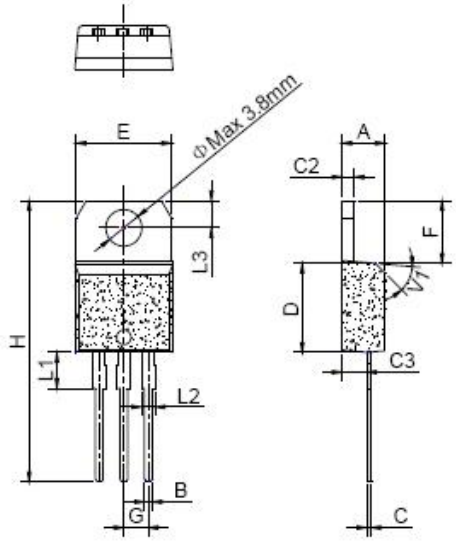
Marking Diagram



Where XXXXX is YYWWL

SCT625A = Part name
YY = Year
WW = Week
L = Lot Number

Mechanical Dimensions TO-220A(Ins)



SYMBOL	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	0.61		0.88	0.024		0.035
C	0.46		0.70	0.018		0.028
C2	1.21		1.32	0.048		0.052
C3	2.40		2.72	0.094		0.107
D	8.60		9.70	0.339		0.382
E	9.60		10.4	0.378		0.409
F	6.55		6.95	0.258		0.274
G		2.54			0.1	
H	28.0		29.8	1.102		1.173
L1		3.75			0.148	
L2	1.14		1.70	0.045		0.067
L3	2.65		2.95	0.104		0.116
V1		45°			45°	

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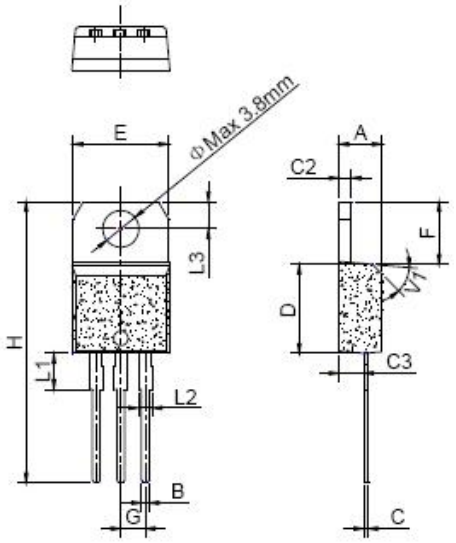
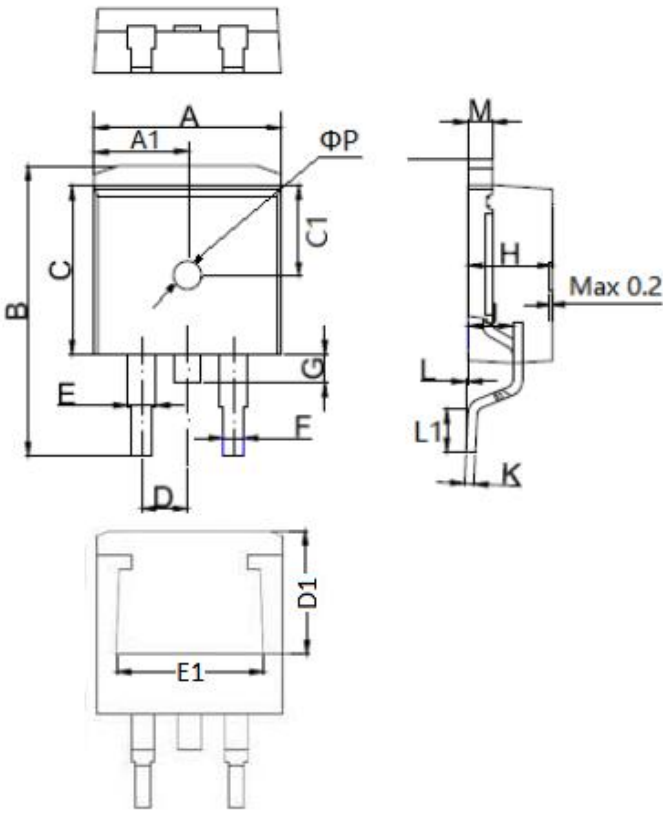
Mechanical Dimensions TO-220B(Non-Ins)



SYMBOL	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	0.61		0.88	0.024		0.035
C	0.46		0.70	0.018		0.028
C2	1.21		1.32	0.048		0.052
C3	2.40		2.72	0.094		0.107
D	8.60		9.70	0.339		0.382
E	9.60		10.4	0.378		0.409
F	6.20		6.60	0.244		0.260
G		2.54			0.1	
H	28.0		29.8	1.102		1.173
L1		3.75			0.148	
L2	1.14		1.70	0.045		0.067
L3	2.65		2.95	0.104		0.116
V1		45°			45°	

Mechanical Dimensions TO-263



SYMBOL	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	9.90		10.20	0.390		0.402
A1	4.95		5.10	0.195		0.201
B	14.70		15.80	0.579		0.622
C	9.40		9.60	0.370		0.378
C1	4.70		4.80	0.185		0.189
D		2.54			0.100	
D1	7.20					
E	1.20		1.40	0.047		0.055
E1	7.60					
F	0.75		0.85	0.029		0.033
G			1.75			0.069
H	4.40		4.70	0.173		0.185
J	2.30		2.70	0.091		0.106
K	0.38		0.55	0.015		0.022
L	0	0.10	0.25	0	0.004	0.010
L1	2.24		2.84	0.088		0.112
ΦP	1.00		1.50	0.039		0.059
M	1.25		1.35	0.049		0.053

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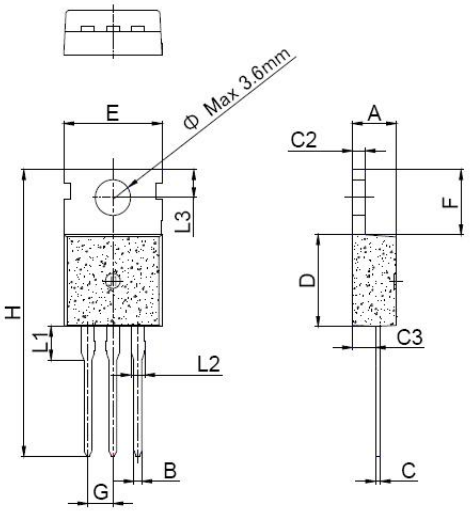
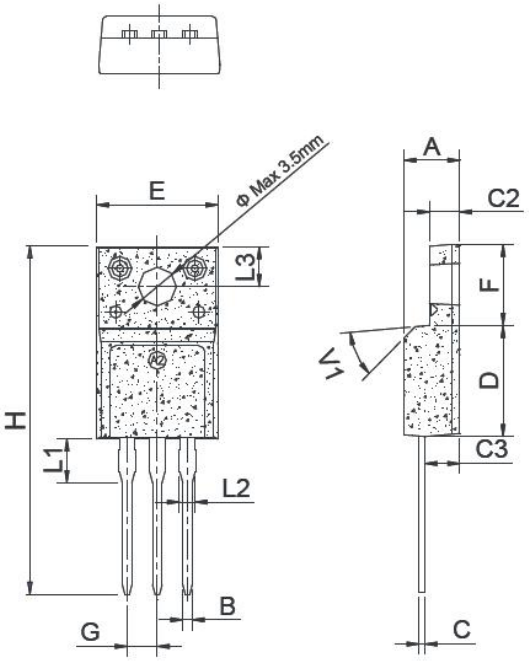
RoHS

Mechanical Dimensions TO-220C



SYMBOL	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	0.70		0.90	0.028		0.035
C	0.45		0.60	0.018		0.024
C2	1.23		1.32	0.048		0.052
C3	2.20		2.60	0.087		0.102
D	8.90		9.90	0.350		0.390
E	9.90		10.3	0.39		0.406
F	6.30		6.90	0.248		0.272
G		2.54			0.1	
H	28.0		29.8	1.102		1.173
L1		3.39			0.133	
L2	1.14		1.70	0.045		0.067
L3	2.65		2.95	0.104		0.116
ϕ		3.6			0.142	

Mechanical Dimensions TO-220F(Ins)



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.50		4.90	0.177		0.193
B	0.74	0.80	0.83	0.029	0.031	0.033
C	0.47		0.65	0.019		0.026
C2	2.45		2.75	0.096		0.108
C3	2.60		3.00	0.102		0.118
D	8.80		9.30	0.346		0.366
E	9.80		10.4	0.386		0.410
F	6.40		6.80	0.252		0.268
G		2.54			0.1	
H	28.0		29.8	1.102		1.173
L1		3.63			0.143	
L2	1.14		1.70	0.045		0.067
L3		3.30			0.130	
V1		45°			45°	

Technical Data
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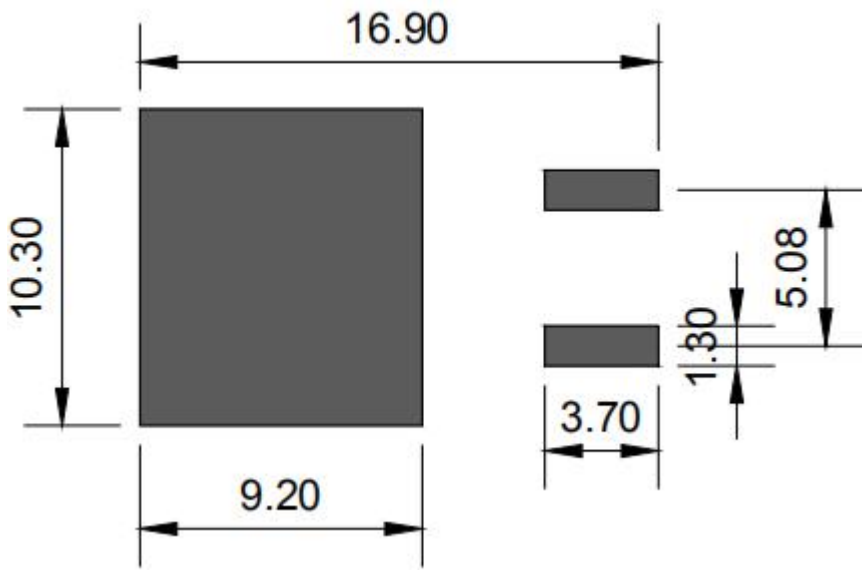
RoHS

Foot Print TO-263 (dimensions in mm)



Ratings and Characteristics Curves

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

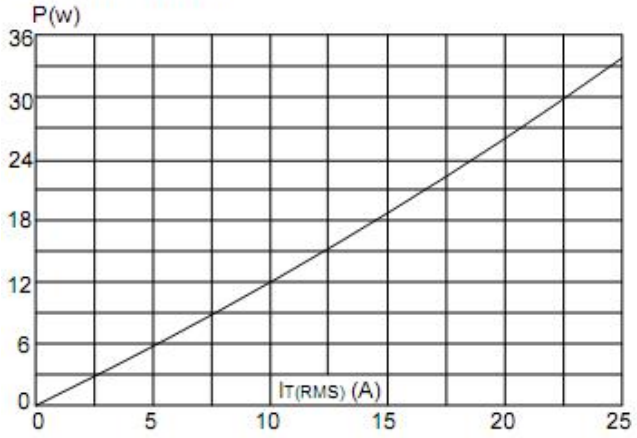


FIG.2: RMS on-state current versus case temperature

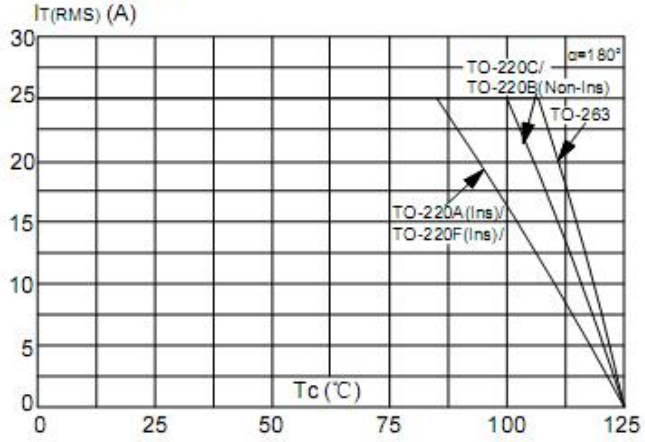


FIG.3: Surge peak on-state current versus number of cycles

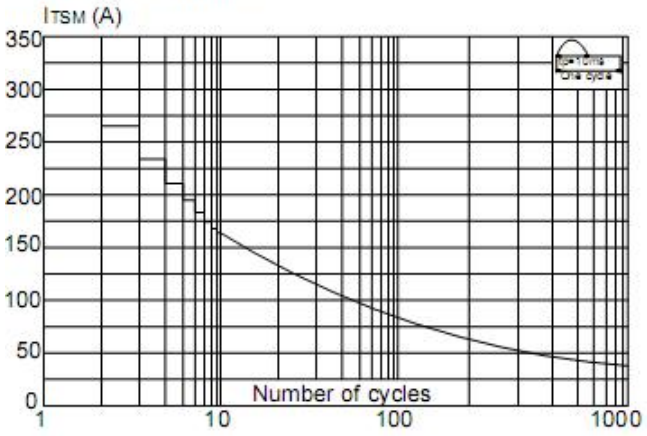


FIG.4: On-state characteristics (maximum values)

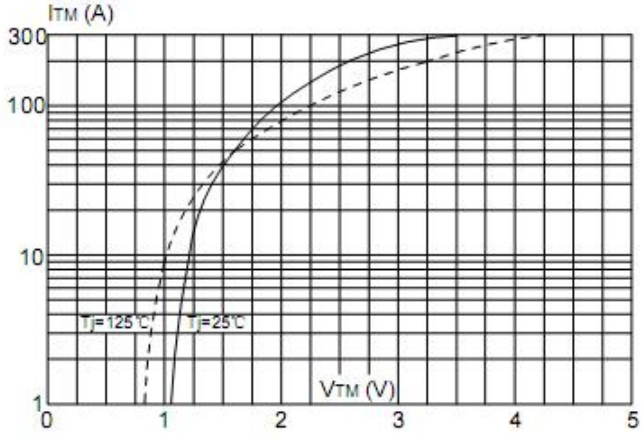


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width tp<10ms, and corresponging value of I^2t (dI/dt < 50A/µs)

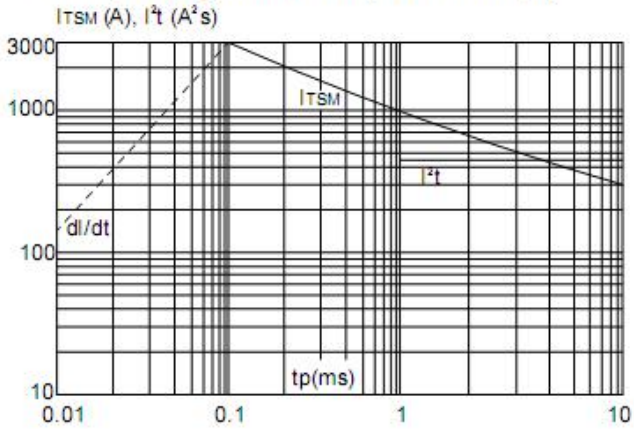
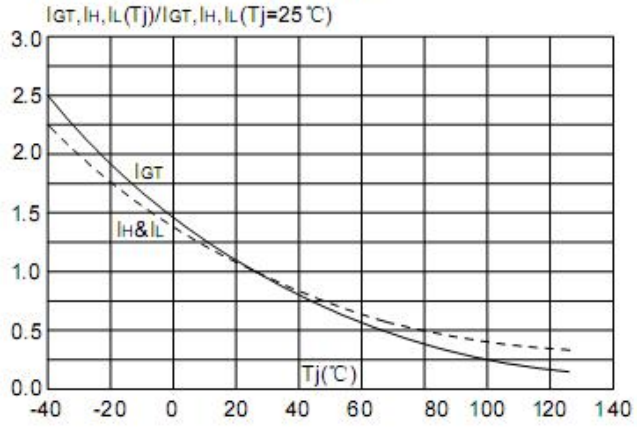


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature



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