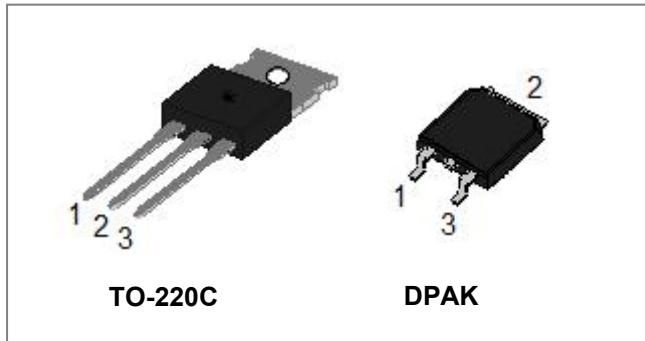
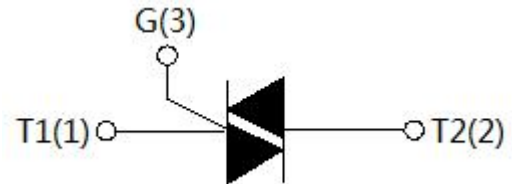


## SST137 Series 8A TRIACs



### Circuit Diagram



### Description

With SST137 series triacs with low holding and latching current are especially recommended for use on middle and small resistance type power load. From all three terminals to external heatsink.

### Maximum Ratings:

Characteristics	Symbol	Condition	Max.	Units
Storage junction temperature range	$T_{stg}$	-	-40-150	°C
Operating junction temperature range	$T_j$	-	-40-125	°C
Repetitive peak off-state voltage( $T_j=25^\circ\text{C}$ )	$V_{DRM}$	-	600/800	V
Repetitive peak reverse voltage( $T_j=25^\circ\text{C}$ )	$V_{RRM}$	-	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	$I_{(TRMS)}$	DPAK/TO-220C( $T_c=103^\circ\text{C}$ )	8	A
Non repetitive surge peak on-state current (full cycle, F=50Hz)	$I_{TSM}$	-	65	A
$I^2t$ value for fusing ( $t_p=10\text{ms}$ )	$I^2t$	-	21	A <sup>2</sup> s
Critical rate of rise of on-state current ( $I_G=2 \times I_{GT}$ )	dI/dt	I - II -III	2	A
		IV	50	
Peak gate current	$I_{GM}$	-	10	A/ $\mu\text{s}$
Average gate power dissipation	$P_{GM}$	-	0.5	W
Peak gate power	$P_{G(AV)}$	-	5	W

### Electrical Characteristics (T<sub>j</sub>=25°C unless otherwise specified)

Symbol	Test Condition	Quadrant		Value				Unit
				D	E	F	G	
I <sub>GT</sub>	V <sub>D</sub> =12V R <sub>L</sub> =30Ω	I - II - III	MAX	5	10	25	50	mA
		IV		10	25	70	100	
V <sub>GT</sub>		ALL	MAX	1.3				V
V <sub>GD</sub>	V <sub>D</sub> =V <sub>DRM</sub> T <sub>j</sub> =125°C R <sub>L</sub> =3.3KΩ	ALL	MIN	0.2				V
I <sub>L</sub>	I <sub>G</sub> =1.2I <sub>GT</sub>	I - III	MAX	10	20	50	70	mA
		II - IV		20	30	70	100	
I <sub>H</sub>	I <sub>T</sub> =100mA		MAX	10	15	40	60	mA
dV/dt	V <sub>D</sub> =2/3V <sub>DRM</sub> Gate Open T <sub>j</sub> =125°C		MIN	20	50	50	200	V/μs

### Static Characteristics

Symbol	Condition	Max.	Units
V <sub>TM</sub>	I <sub>T</sub> =10A t <sub>p</sub> =380μs, T <sub>j</sub> =25°C	1.6	V
I <sub>DRM</sub>	V <sub>D</sub> =V <sub>DRM</sub> V <sub>R</sub> =V <sub>RRM</sub> , T <sub>j</sub> =25°C	5	μA
I <sub>RRM</sub>	V <sub>D</sub> =V <sub>DRM</sub> V <sub>R</sub> =V <sub>RRM</sub> , T <sub>j</sub> =125°C	1	mA

### Thermal Resistances

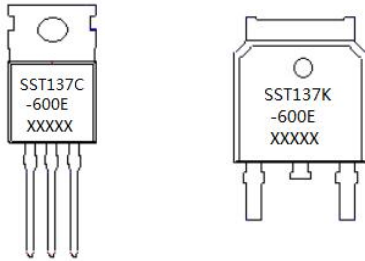
Symbol	Condition	Value	Units
R <sub>th(j-c)</sub>	Junction to case(AC)	TO-220C	1.8
		DKPAK	2.1

### Ordering Information

<p><b>S</b> SMC Diode Solutions</p> <p><b>ST</b> Triacs</p> <p><b>I<sub>T(RMS)</sub>:8A</b></p> <p><b>C:TO-220C</b></p> <p><b>K:DKPAK</b></p>	<p><b>137</b></p> <p><b>C</b></p>	<p><b>-600</b></p>	<p><b>E</b></p>	<p>E: I<sub>GT1-3</sub> ≤ 10mA I<sub>GT4</sub> ≤ 25mA</p> <p>600: V<sub>DRM</sub>/V<sub>RRM</sub> ≥ 600V</p> <p>800: V<sub>DRM</sub>/V<sub>RRM</sub> ≥ 800V</p>
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Device	Package	Shipping
SST137C-600E	TO-220C	50pcs/ Tube
SST137K-600/800E	DKPAK	2500pcs/ Reel
SST137K-600/800ETR	DKPAK	2500pcs/ Reel

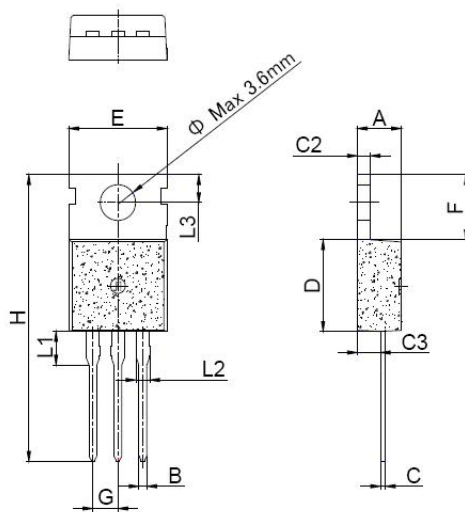
## Marking Diagram



Where XXXXX is YYWWL

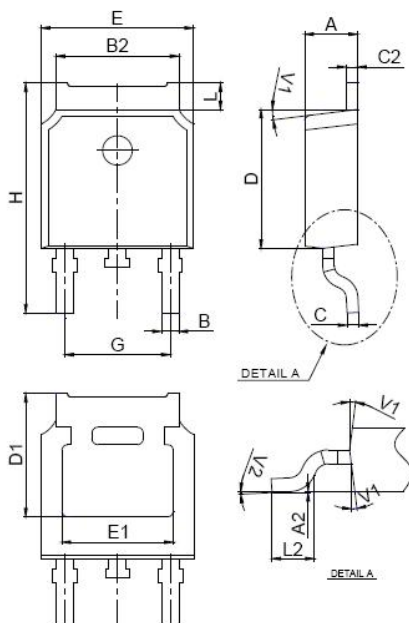
SST137C-600E = Part name  
SST137K-600E = Part name  
YY = Year  
WW = Week  
L = Lot Number

## 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	

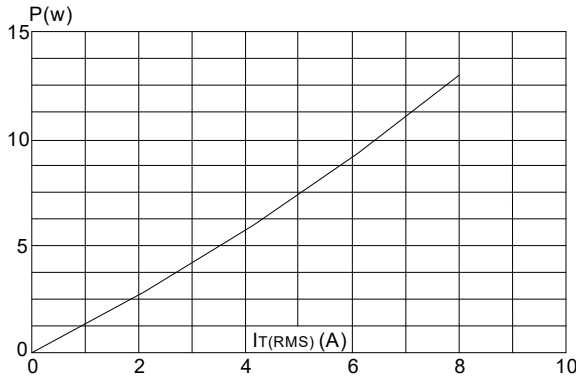
## Mechanical Dimensions DPAK



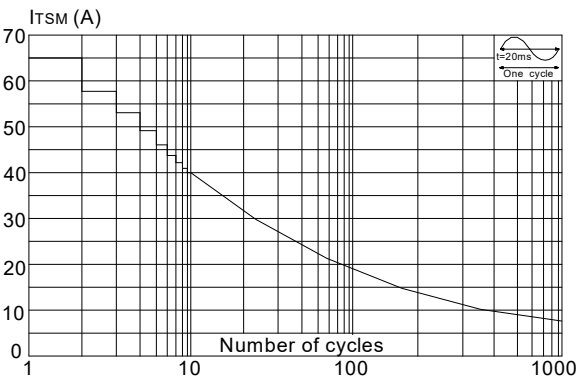
SYMBOL	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.10		2.50	0.083		0.098
A2	0		0.10	0		0.004
B	0.66		0.86	0.026		0.034
B2	5.18		5.48	0.202		0.216
C	0.40		0.60	0.016		0.024
C2	0.44		0.58	0.017		0.023
D	5.90		6.30	0.232		0.248
D1	5.30REF			0.209REF		
E	6.40		6.80	0.252		0.268
E1	4.63			0.182		
G	4.47		4.67	0.176		0.184
H	9.50		10.70	0.374		0.421
L	1.09		1.21	0.043		0.048
L2	1.35		1.65	0.053		0.065
V1	7°			7°		
V2	0°		6°	0°		6°

**Ratings and Characteristics Curves**

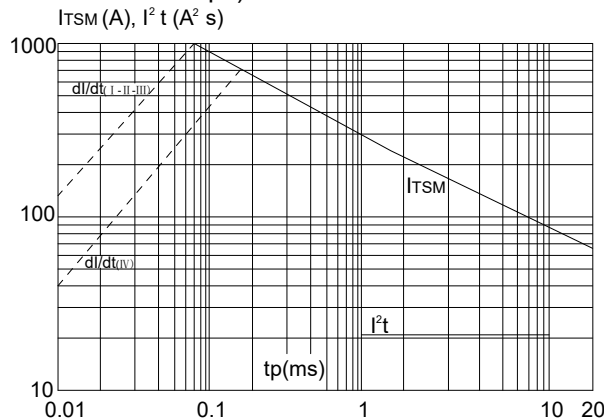
**FIG.1:** Maximum power dissipation versus RMS on-state current



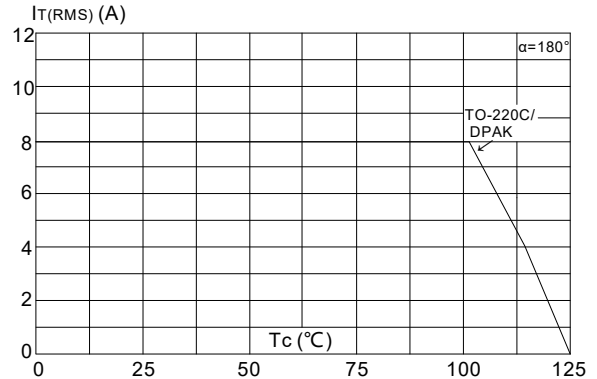
**FIG.3:** Surge peak on-state current versus number of cycles



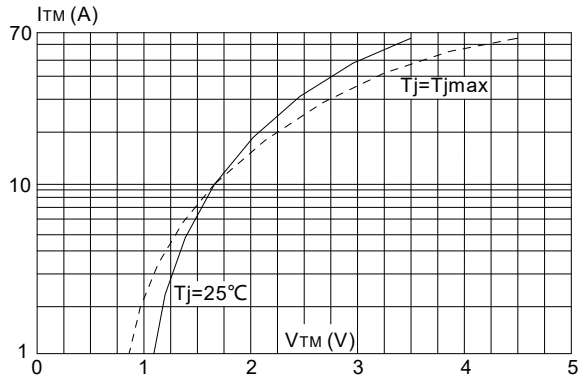
**FIG.5:** Non-repetitive surge peak on-state current for a sinusoidal pulse with width  $t_p < 20\text{ms}$ , and corresponding value of  $f t$  (I - II - III:  $di/dt < 50\text{A}/\mu\text{s}$ ; IV:  $di/dt < 10\text{A}/\mu\text{s}$ )



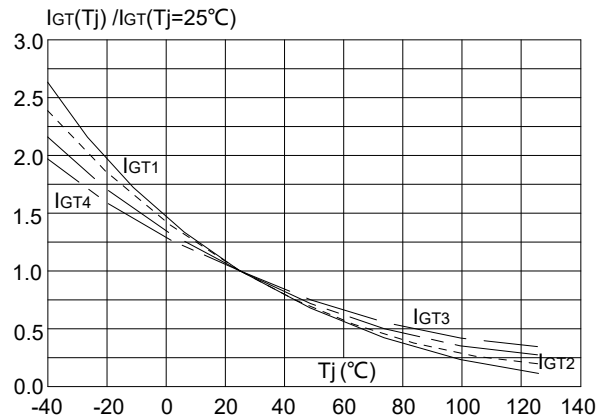
**FIG.2:** RMS on-state current versus case temperature



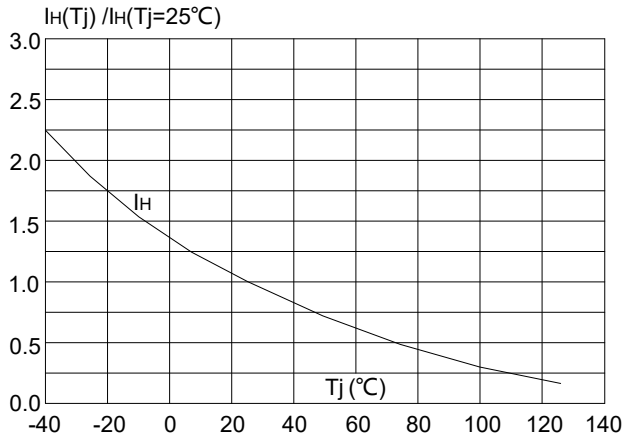
**FIG.4:** On-state characteristics (maximum values)



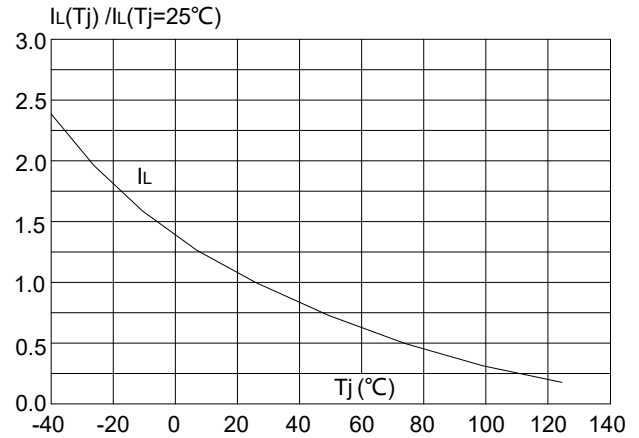
**FIG.6:** Relative variations of gate trigger current versus junction temperature



**FIG.7:** Relative variations of holding current versus junction temperature



**FIG.8:** Relative variations of latching current versus junction temperature



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