




Product Manual

EKWIN ELECTRONICS CO.,LTD

EK TYN625/825/1225

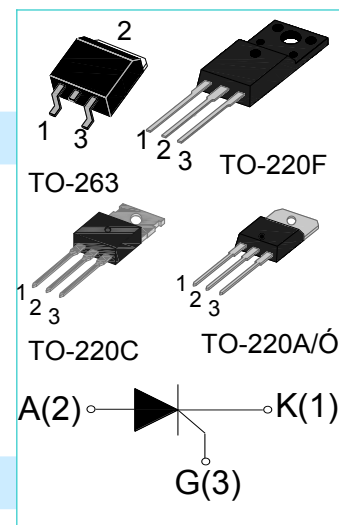
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 25A SCRs

TYN625/825/1225 Serial

Main Features:

$I_{T(RMS)}$	V_{DRM}/V_{RRM}	I_{GT}
25A	600V (TYN625) 800V (TYN825) 1200V(TYN1225)	$\leq 40mA$



Description:

TYN625/825/1225 series of silicon controlled rectifiers, with high ability to withstand the shock loading of large current, 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.

Absolute Ratings(limiting values) :

Symbol	Parameter	Value	Unit	
T_{stg}	Storage junction temperature range	- 40 to + 150	$^{\circ}C$	
T_j	Operating junction temperature range	- 40 to + 125	$^{\circ}C$	
$I_{T(RMS)}$	RMS on-state current	TO-220A/F(Ins) ($T_C=85^{\circ}C$)	25	A
		TO-220B/C(Non-Ins) ($T_C=100^{\circ}C$)		
		TO-263 ($T_C=105^{\circ}C$)		
I_{TSM}	Non repetitive surge peak on-state current (tp=10ms)	300	A	
V_{DRM}	Repetitive peak off-state voltage($T_j =25^{\circ}C$)	600 and 800 and 1200	V	
V_{RRM}	Repetitive peak reverse voltage($T_j =25^{\circ}C$)	600 and 800 and 1200	V	
V_{DSM}	Non repetitive surge peak Off-state voltage	$V_{DRM} + 100$	V	
V_{RSM}	Non repetitive peak reverse voltage	$V_{RRM} + 100$	V	
I^2t	I^2t value for fusing tp = 10 ms	450	A^2s	

dI/dt	Critical rate of rise of on-state current ($I_G = 2 \times I_{GT}$)	50	A/ μ s
I_{GM}	Peak gate current	4	A
P_{G(AV)}	Average gate power dissipation	1	W
P_{GM}	Peak gate power	5	W

Electrical Characteristics : (T_j=25°C unless otherwise specified)

Symbol	Test Condition	Value			Unit
		MIN	TYP	MAX	
I_{GT}	V _D =12V R _L =33 Ω	--	-	40	mA
V_{GT}		--	-	1.3	V
V_{GD}	V _D =V _{DRM} R _L =3.3k Ω T _j =125°C	0.2	--	--	V
I_L	I _G =1.2 I _{GT}	--	--	90	mA
I_H	I _T = 500mA	--	--	50	mA
dV/dt	V _D =2/3V _{DRM} Gate Open T _j =125°C	1000	--	--	V/ μ s

STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX)	Unit
V_{TM}	I _{TM} = 32A tp= 380 μ s	T _j =25°C	1.6	V
I_{DRM} I_{RRM}	V _D =V _{DRM} , V _R =V _{RRM}	T _j =25°C	10	μ A
		T _j =125°C	4	mA

Thermal Resistances :

Symbol	Parameter		Value	Unit
R_{th(j-c)}	junction to base(AC)	TO-220B/C (no-Ins)	0.85	°C/W
		TO-220A (Ins)	1.4	
		TO-220F (Ins)	1.5	
		TO-263 (no-Ins)	0.75	

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

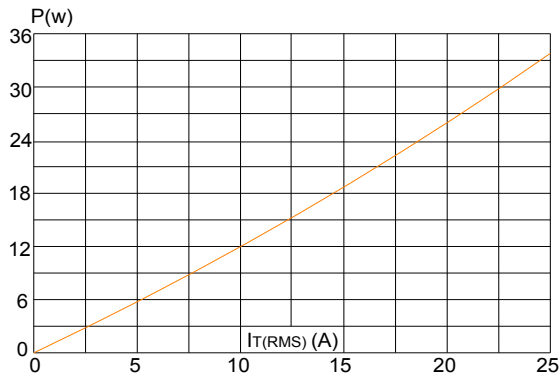


FIG.2: RMS on-state current versus case temperature

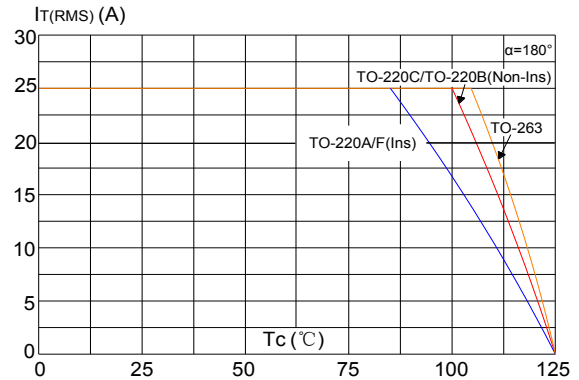


FIG.3: Surge peak on-state current versus number of cycles

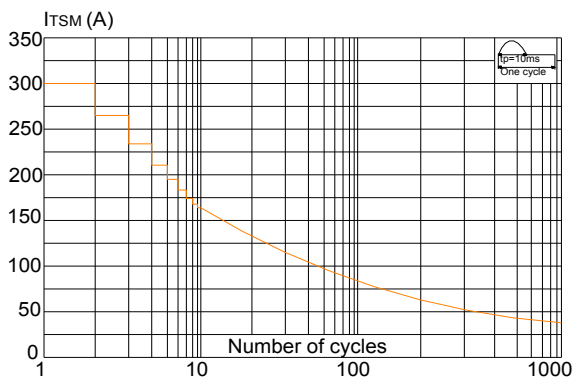


FIG.4: On-state characteristics (maximum values)

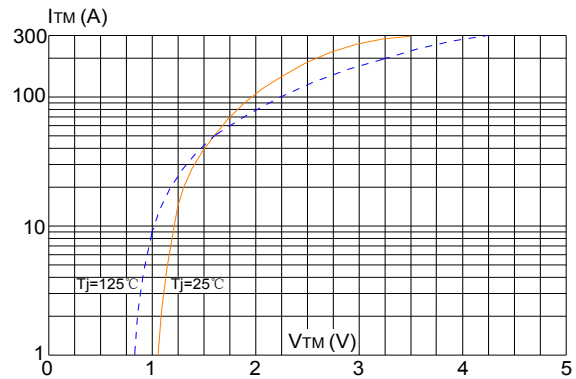


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10\text{ms}$, and corresponding value of I^2t ($dI/dt < 150\text{A}/\mu\text{s}$)

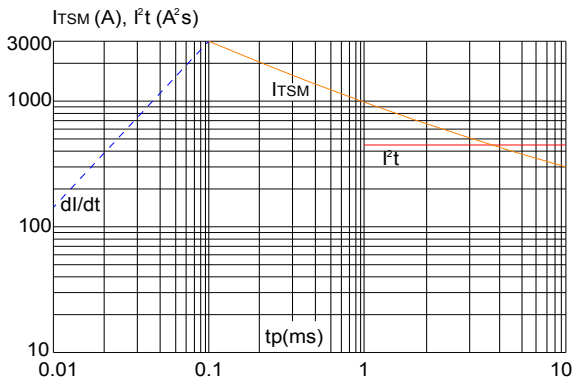
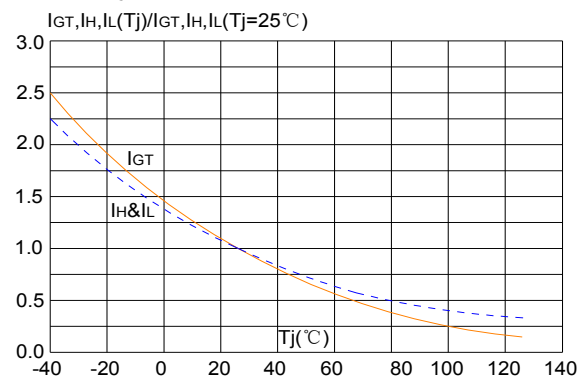
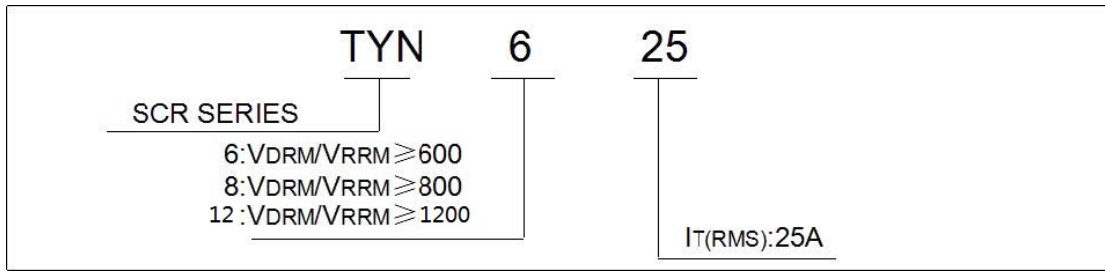


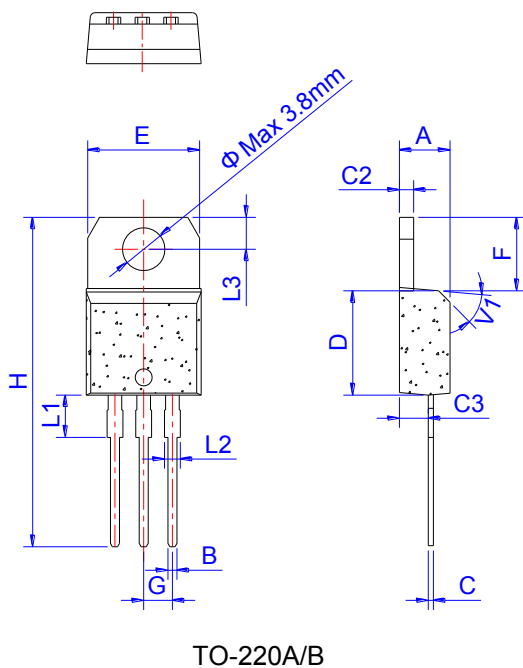
FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature



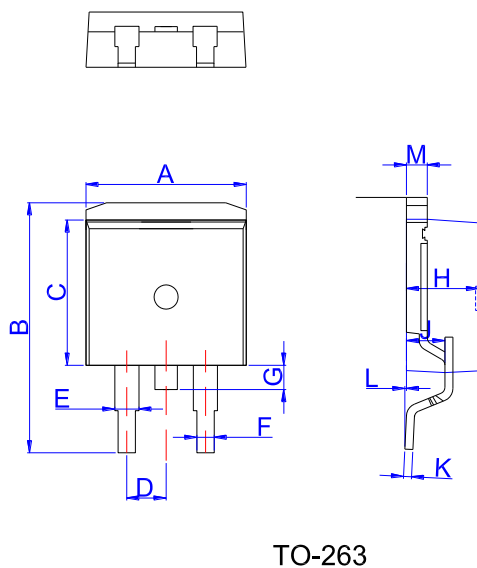
Ordering Information:



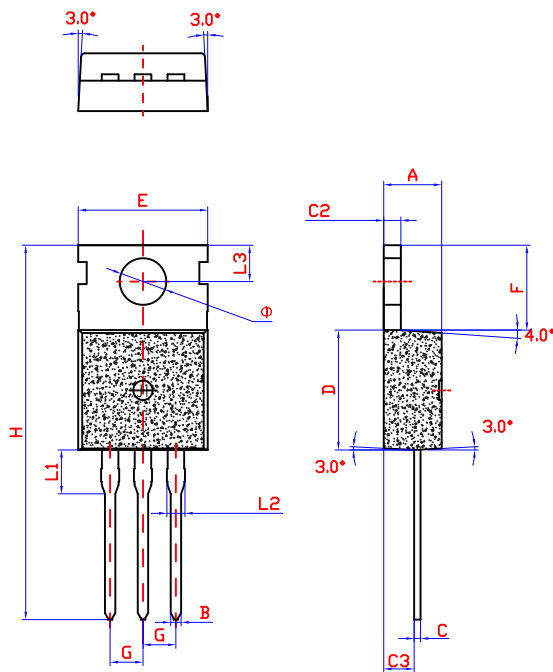
Package Mechanical Data :



Ref.	Dimensions				
	Min.	Typ.	Max.	Min.	Max.
A	4.40				
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	9.80		10.4	0.386	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°

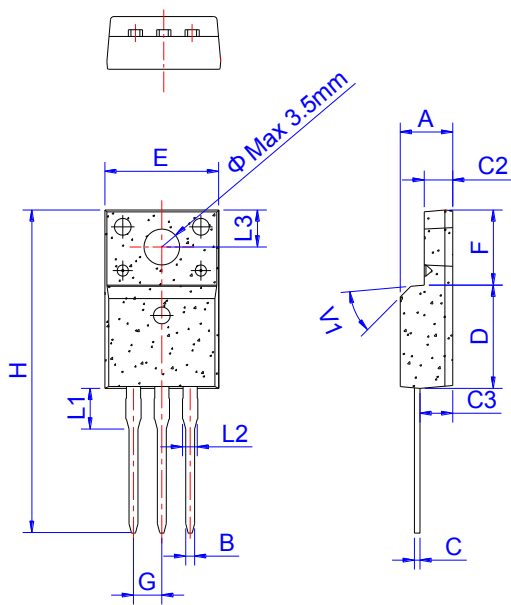


Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	9.90		10.20	0.390		0.402
B	14.70		15.80	0.579		0.622
C	9.4		9.6	0.37		0.378
D		2.54			0.100	
E	1.20		1.40	0.047		0.055
F	0.75		0.85	0.029		0.033
G			1.75			0.069
H	4.40		4.70	0.173		0.185
J	2.30		2.70	0.091		0.106
K	0.38		0.55	0.015		0.022
L	0	0.10	0.25	0	0.004	0.010
M	1.25		1.35	0.049		0.053



TO-220C

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.4		4.6	0.173		1.181
B	0.7		0.9	0.027		0.035
C	0.45		0.6	0.018		0.024
C2	1.23		1.32	0.048		0.052
C3	2.2		2.6	0.086		0.102
D	8.9		9.9	0.350		0.390
E	9.9		10.3	0.390		0.406
F	6.3		6.9	0.248		0.272
G		2.54			0.1	
H	28.0		29.8	11.0		11.7
L1		3.2			0.126	
L2	1.14		1.7	0.045		0.067
L3	2.65		2.95	0.104		0.116
Φ		3.6			0.142	



TO-220F Ins

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.80	0.173		0.189
B	0.74	0.80	0.83	0.029	0.031	0.033
C	0.48		0.75	0.019		0.030
C2	2.40		2.70	0.094		0.106
C3	2.60		3.00	0.102		0.118
D	8.80		9.30	0.346		0.366
E	9.70		10.3	0.382		0.406
F	6.40		7.00	0.252		0.276
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°	