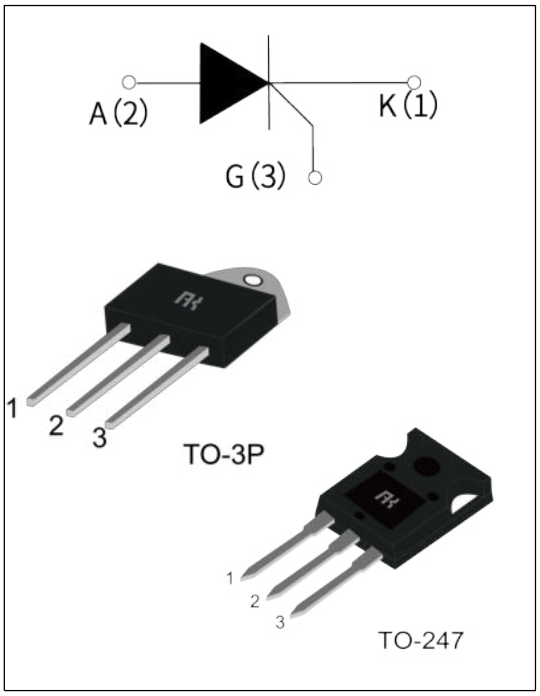
TYNxx55 Serial 55A SCRs



GENERAL DESCRIPTION:

TYN1655/1255 series of silicon controlled rectifiers,with high ability to withstand the shock loading of larg ecurrent,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.

Main Features:

$I_{T(RMS)}$	V_{DRM}/V_{RRM}	I_{GT}
55A	600/1200/1600V	<60 mA

Absolute Ratings(limiting values) :

Symbol	Parameter		Value	Unit
T_{stg}	Storage junction temperature range		- 40 to + 150	℃
T_j	Operating junction temperature range		- 40 to + 125	℃
$I_{T(AV)}$	Average on-state current	TO-3P Ins (TC=80℃)	40	A
		TO-247 Non-Ins (TC=83℃)		
$I_{T(RMS)}$	RMS on-state current	TO-3P Ins (TC=80℃)	55	A
		TO-247 Non-Ins (TC=83℃)		
I_{TSM}	Non repetitive surge peak on-state current (tp=10ms)		520	A
V_{DRM}	Repetitive peak off-state voltage(Tj =25℃)		600/1200/1600	V
V_{RRM}	Repetitive peak reverse voltage(Tj =25℃)		600/1200/1600	V
I^2t	I^2t value for fusing tp = 10 ms		1350	A^2s
dI/dt	Critical rate of rise of on-state current (I_G =2×I_{GT})		150	A/μs
I_{GM}	Peak gate current		1.5	A

$P_{G(AV)}$	Average gate power dissipation	2	W
P_{GM}	Peak gate power	10	W

Electrical Characteristics : (Tj=25℃ unless otherwise specified)

Symbol	Test Condition	TYN6055	TYN1255	TYN1655	Unit
		MAX	MAX	MAX	
I_{GT}	V_D=12V R_L=30Ω	25	35	60	mA
V_{GT}		1.5			V
V_{GD}	V_D=V_{DRM} R_L=3.3kΩ T_j=125°C	0.2			V
I_L	I_G=1.2 I_{GT}	70	80	100	mA
I_H	I_T= 0.5 A	50	60	80	mA
$d_{V/dt}$	V_D=2/3V_{DRM} Gate Open Tj=125℃	700	1000	1000	V/μs

STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX)	Unit
V_{TM}	I_{TM}= 80A tp= 380μs	T_j=25°C	1.8	V
I_{DRM} I_{RRM}	V_D=V_{DRM} ,V_R=V_{RRM}	T_j=25°C	10	μ A
		T_j=125°C	8	mA

Thermal Resistances :

Symbol	Parameter		Value	Unit
Rth(j-mb)	thermal resistance from junction to mounting case	TO-247	0.60	℃/W
		TO-P3	0.65	
Rth(j-hs)	thermal resistance from junction to heatsink with heatsink compound	TO-247	0.85	
		TO-P3	0.9	

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

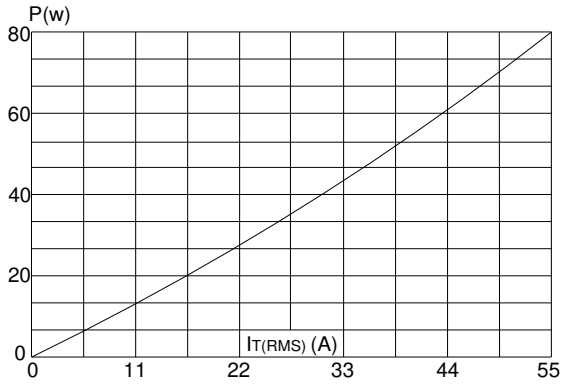


FIG.2: RMS on-state current versus case temperature

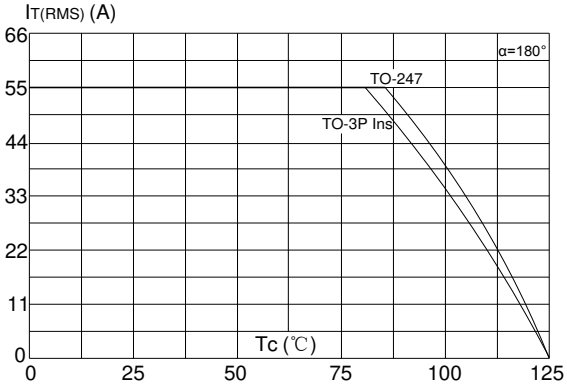


FIG.3: Surge peak on-state current versus number of cycles

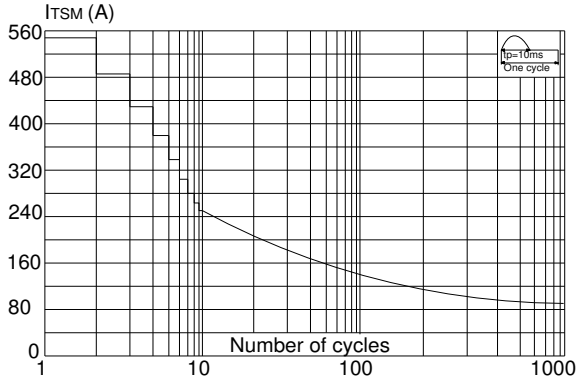


FIG.4: On-state characteristics (maximum values)

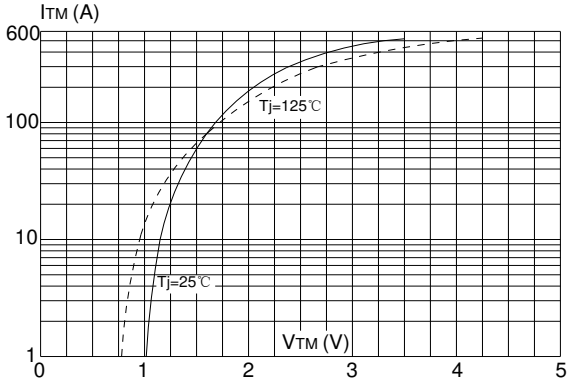


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width tp<10ms, and corresponging value of I^2t (dI/dt < 150A/μs)

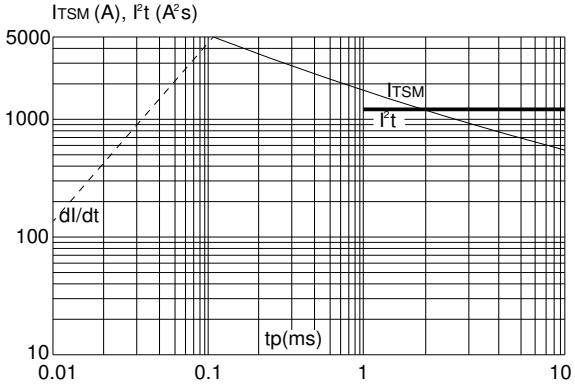
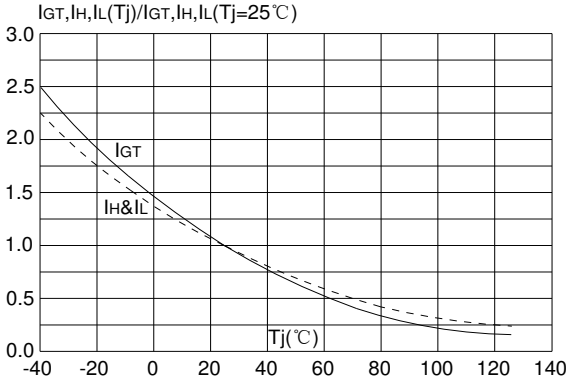
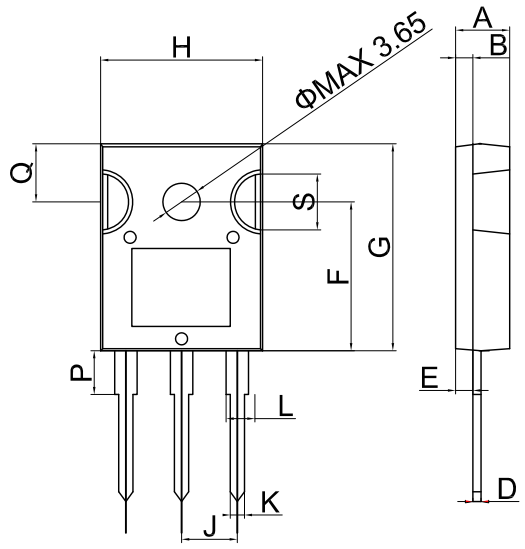


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature



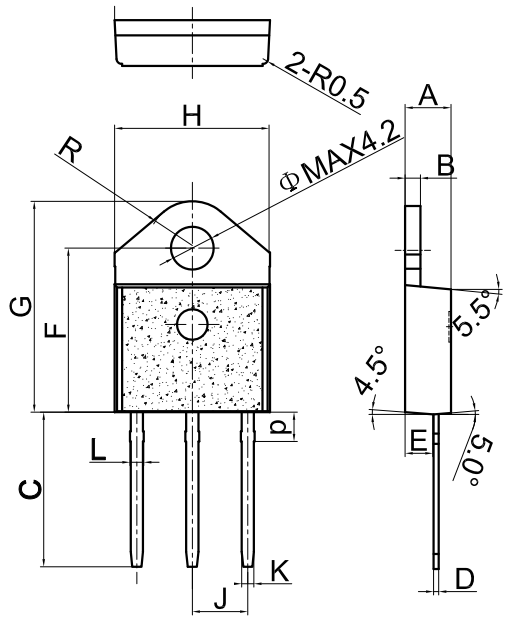
Package Mechanical Data :

TO-247



Ref.	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	5.1	5.4	0.201	0.213
B	1.6	1.8	0.063	0.071
C	14.35	15.4	0.565	0.606
D	0.6	0.9	0.024	0.035
E	1.5	1.75	0.059	0.069
F	14.4	15.1	0.567	0.594
G	19.7	20.6	0.775	0.811
H	15.4	16.2	0.606	0.638
J	5.3	5.6	0.209	0.220
K	1.3	1.5	0.051	0.059
L	2.0	2.3	0.079	0.091
P	4.1	4.4	0.161	0.173
Q	5.6	5.8	0.220	0.228
S	5.35	5.65	0.211	0.222

TO-P3(TO-218)



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.4		4.6	0.173		0.181
B	1.45		1.55	0.057		0.061
C	14.35		15.6	0.565		0.614
D	0.5		0.7	0.020		0.028
E	2.7		2.9	0.106		0.114
F	15.8		16.5	0.622		0.650
G	20.4		21.1	0.815		0.831
H	15.1		15.5	0.594		0.610
J	5.4		5.65	0.213		0.222
K	1.2		1.4	0.047		0.055
L	1.35		1.50	0.053		0.059
P	2.8		3.0	0.110		0.118
R		4.6			0.181	

Ordering Information:

TYN 60 55

SCR SERIES

60:V_{DRM}/V_{RRM}>600V
12:V_{DRM}/V_{RRM}>1200V
16:V_{DRM}/V_{RRM}>1600V

$I_{T(RMS)}$=55A