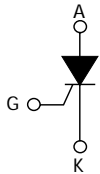
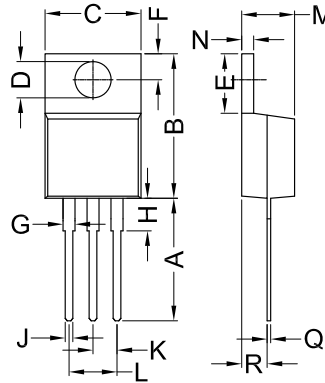


# STYN212(S) thru STYN1012(S)

## Thyristor Discretes(SCRs)

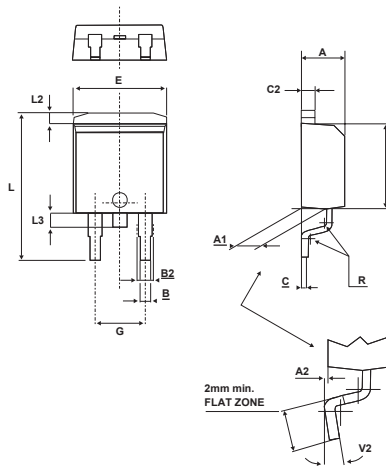
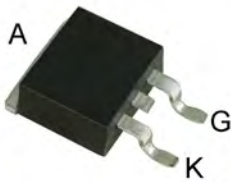


Dimensions TO-220AB



REF.	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	12.70	13.97	0.500	0.550
B	14.73	16.00	0.580	0.630
C	9.91	10.66	0.390	0.420
D	3.54	4.08	0.139	0.161
E	5.85	6.85	0.230	0.270
F	2.54	3.18	0.100	0.125
G	1.15	1.65	0.045	0.065
H	2.79	5.84	0.110	0.230
J	0.64	1.01	0.025	0.040
K	2.54	BSC	0.100	BSC
L	5.08	BSC	0.200	BSC
M	4.32	4.82	0.170	0.190
N	1.14	1.39	0.045	0.055
Q	0.35	0.56	0.014	0.022
R	2.29	2.79	0.090	0.110

Dimensions TO-263(D<sup>2</sup>PAK)



REF.	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	10.00		10.28	0.393		0.405
G	4.88		5.28	0.192		0.208
L	15.00		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	
V2	0°		8°	0°		8°

### ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
$I_{T(RMS)}$	RMS on-state current (180° conduction angle)		$T_c = 105^\circ\text{C}$ 12	A
$I_{T(AV)}$	Average on-state current (180° conduction angle)		$T_c = 105^\circ\text{C}$ 8	A
$I_{TSM}$	Non repetitive surge peak on-state current	$t_p = 8.3 \text{ ms}$	$T_j = 25^\circ\text{C}$ 146	A
		$t_p = 10 \text{ ms}$		
$I^2t$	$I^2t$ Value for fusing	$t_p = 10 \text{ ms}$	$T_j = 25^\circ\text{C}$ 98	A <sup>2</sup> S
$di/dt$	Critical rate of rise of on-state current $I_G = 2 \times I_{GT}$ , $t_r \leq 100 \text{ ns}$	$F = 60 \text{ Hz}$	$T_j = 125^\circ\text{C}$ 50	A/ $\mu\text{s}$
$I_{GM}$	Peak gate current	$t_p = 20 \mu\text{s}$	$T_j = 125^\circ\text{C}$ 4	A
$P_{G(AV)}$	Average gate power dissipation		$T_j = 125^\circ\text{C}$ 1	W
$T_{stg}$ $T_j$	Storage junction temperature range Operating junction temperature range		- 40 to + 150 - 40 to + 125	°C
$V_{RGM}$	Maximum peak reverse gate voltage		5	V

# STYN212(S) thru STYN1012(S)

## Thyristor Discretes(SCRs)

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

### ■ STANDARD

Symbol	Test Conditions			Value	Unit	
$I_{GT}$	$V_D = 12\text{ V}$	$R_L = 33\text{ W}$	MIN.	2	mA	
			MAX.	15		
$V_{GT}$			MAX.	1.3	V	
$V_{GD}$	$V_D = V_{DRM}$	$R_L = 3.3\text{ kW}$	$T_j = 125^\circ\text{C}$	MIN.	0.2	V
$I_H$	$I_T = 500\text{ mA}$	Gate open		MAX.	30	mA
$I_L$	$I_G = 1.2 I_{GT}$			MAX.	60	mA
$dV/dt$	$V_D = 67\% V_{DRM}$	Gate open	$T_j = 125^\circ\text{C}$	MIN.	200	V/ $\mu\text{s}$
$V_{TM}$	$I_{TM} = 24\text{ A}$	$t_p = 380\text{ }\mu\text{s}$	$T_j = 25^\circ\text{C}$	MAX.	1.6	V
$V_{t0}$	Threshold voltage		$T_j = 125^\circ\text{C}$	MAX.	0.85	V
$R_d$	Dynamic resistance		$T_j = 125^\circ\text{C}$	MAX.	30	m $\Omega$
$I_{DRM}$ $I_{RRM}$	$V_{DRM} = V_{RRM}$		$T_j = 25^\circ\text{C}$	MAX.	5	$\mu\text{A}$
			$T_j = 125^\circ\text{C}$		2	mA

### THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	Junction to case (DC)		1.3	$^\circ\text{C/W}$
$R_{th(j-a)}$	Junction to ambient		TO-220AB	$^\circ\text{C/W}$
		$S = 1.0\text{ cm}^2$	TO-263	

S= copper surface under tab

### PRODUCT SELECTOR

Part Number	Voltage (xxx)	Sensitivity	Package
STYNX12S	200~~1000	15 mA	TO-263
STYNX12	200~~1000	15 mA	TO-220AB

### OTHER INFORMATION

Part Number	Marking	Weight	Base Quantity	Packing mode
STYNX12S	STYNX12S	1.50 g	50	Tube
STYNX12	STYNX12	1.90 g	50	Tube

Note: x = voltage

