

## Thyristor/Thyristor Thyristor/Diode

### SCA160AA, SCE160AA

$I_{T(AV)} = 160A$ ,  $V_{RRM} = 800 - 1800V$

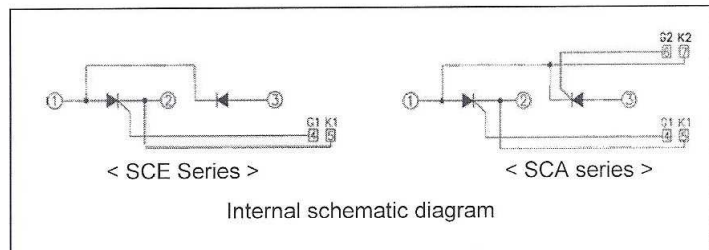
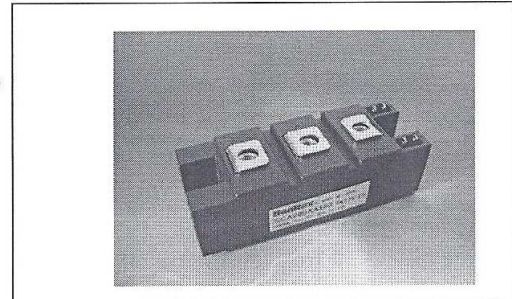
SanRex Thyristor/Thyristor (**SCA series**), Thyristor/Diode (**SCE series**) are designed for general purpose high voltage applications. **The modules are in an Isolated Industrial Standard Package.**

#### Features

- \* Glass-passivated Junctions Feature
- \* High Surge Current ( $I_{TSM}=5900A$ )
- \* Low On-State Voltage Drop ( $V_{TM}=1.4V$ )
- \* UL E76102 approved
- \* RoHS compliance

#### Typical Applications

- \* Welders
- \* Uninterruptible Power Supplies (UPS)
- \* Temperature and Lighting Controls
- \* Soft Starters
- \* Battery Chargers



< Maximum Ratings >

$T_j = 25^\circ C$  (unless otherwise noted) per diode

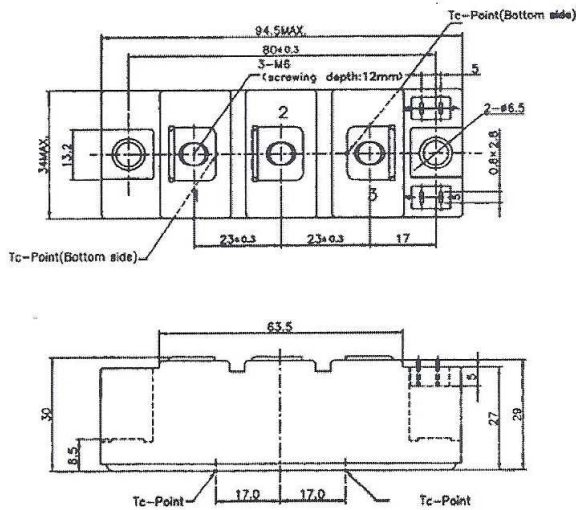
Symbol	Item	Ratings				Unit
		SCA160AA80 SCE160AA80	SCA160AA120 SCE160AA120	SCA160AA160 SCE160AA160	SCA160AA180 SCE160AA180	
$V_{RRM}$	Repetitive Peak Reverse Voltage	800	1200	1600	1800	V
$V_{RSM}$	Non-Repetitive Peak Reverse Voltage	960	1300	1700	1900	V
$V_{DRM}$	Repetitive Peak Off-state Voltage	800	1200	1600	1800	V
$I_{T(AV)}$	Average On-state Current	$T_c = 88^\circ C$			160	A
$I_{T(RMS)}$	R.M.S. On-state Current	$T_c = 88^\circ C$			251	A
$I_{TSM}$	Surge On-state Current	1/2 cycle, 50Hz/60Hz, Peak value, Non-repetitive			5400/5900	A
$I^2 t$	$I^2 t$ (for fusing)	Value for one cycle surge current			145000	$A^2 s$
$P_{GM}$	Peak Gate Power Dissipation				10	W
$P_{G(AV)}$	Average Gate Power Dissipation				3	W
$I_{FGM}$	Peak Gate Current				3	A
$V_{FGM}$	Peak Gate Voltage (Forward)				10	V
$V_{RGM}$	Peak Gate Voltage (Reverse)				5	V
$di/dt$	Critical Rate of Rise of On-state Current	$I_G=100mA$ , $V_D=1/2V_{DRM}$ , $dig/dt=0.1A/\cdot s$			200	$A/\cdot s$
$V_{ISO}$	Isolation Breakdown Voltage	A.C. 1 minute			3000	
$T_j$	Operating Junction Temperature				-40 to +125	$^\circ C$
$T_{stg}$	Storage Temperature				-40 to +125	$^\circ C$
	Mounting Torque	Mounting M6	Recommended Value 2.5 to 3.9		4.7	N*m
		Terminals M6	Recommended Value 2.5 to 3.9		4.7	
	Mass	Typical Value			210	g

## Thyristor/Thyristor, Thyristor/Diode Module SCA160AA, SCE160AA series

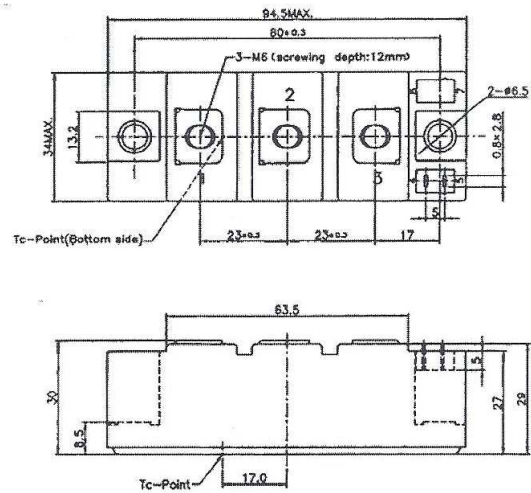
< Electrical Characteristics >

$T_j = 25^\circ\text{C}$  (unless otherwise noted) per diode

Symbol	Item	Conditions	Ratings	Unit
$I_{DRM}$	Repetitive Peak Off-state Current	$T_j = 125^\circ\text{C}, V_D = V_{DRM}$	100	mA
$I_{RRM}$	Repetitive Peak Reverse Current	$T_j = 125^\circ\text{C}, V_R = V_{RRM}$	100	mA
$V_{TM}$	Peak On-State Voltage	$I_T = 500\text{A}$	1.4	V
$V_T(T_0)$	Threshold Voltage	$T_j = 25^\circ\text{C}$	1.0	V
		$T_j = 125^\circ\text{C}$	0.85	
$r_t$	Slope Resistance	$T_j = 25^\circ\text{C}$	1.0	M Ohm
		$T_j = 125^\circ\text{C}$	1.3	
$I_{GT}$	Gate Trigger Current	$V_D = 6\text{V}, I_T = 1\text{A}$	100	mA
$V_{GT}$	Gate Trigger Voltage	$V_D = 6\text{V}, I_T = 1\text{A}$	3	V
$V_{GD}$	Non-Trigger Gate Voltage	$T_j = 125^\circ\text{C}, V_D = 1/2V_{DRM}$	0.25	V
$dv/dt$	Critical Rate of Rise of Off-state Voltage	$T_j = 125^\circ\text{C}, V_D = 2/3V_{DRM}$	1000	V/ $\mu\text{s}$
$R_{th(j-c)}$	Thermal Resistance	Junction to case	0.17	$^\circ\text{C}/\text{W}$



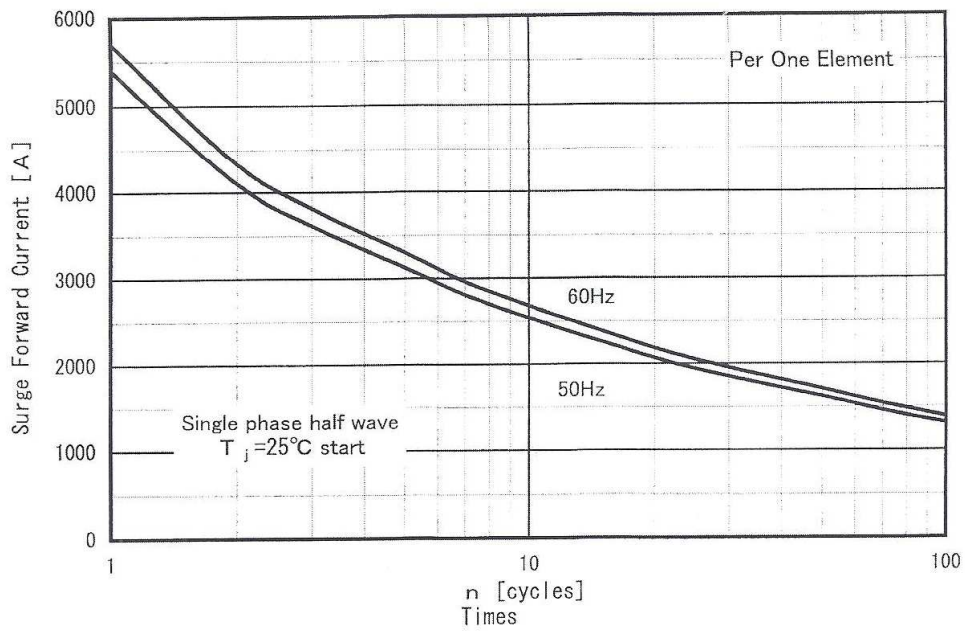
< SCA series : Thyristor/Thyristor >



< SCE series : Thyristor/Diode >

\* Dimensions in millimeters (1mm=0.0394")

SCA160AA, SCE160AA  
Surge Forward Current Rating «Non-Repetitive»



SCA160AA, SCE160AA  
Transient Thermal Impedance

