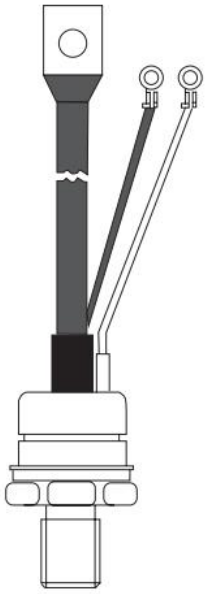
ST180S

Phase Control Thyristors

FEATURES

- Center amplifying gate
- Hermetic metal case with ceramic insulator (Also available with glass-metal seal up to 1200 V)
- International standard case TO-209AB (TO-93)
- Compression Bonded Encapsulation for heavy duty operations such as severe thermal cycling
- Minimum Lot-to-Lot variations for robust device performance and reliable operation



APPLICATIONS

- DC motor controls
- Controlled DC power supplies
- AC controllers

ABSOLUTE MAXIMUM RATINGS

SYMBOL	PARAMETER	RATINGS				UNIT
		ST180S04	ST180S08	ST180S12	ST180S16	
V_{RRM}	Repetitive Peak Reverse Voltage	400	800	1200	1600	V
V_{RSM}	Non-Repetitive Peak Reverse Voltage	400	800	1200	1600	V

SYMBOL	PARAMETER	CONDITIONS		VALUE	UNIT
$I_{T(AV)}$	Average Forward Current	T_C=85℃, 180° conduction, half sine wave		200	A
$I_{T(RMS)}$	Maximum RMS on-state current	DC at 76℃ case temperature		360	A
I_{TSM}	Max. peak, one-cycle forward, non-repetitive surge current	t = 10ms	No voltage reapplied	5700	A
		t = 8.3ms		5970	
		t = 10ms	100% VRRM reapplied	4800	
		t = 8.3ms		5000	
T_J	Junction Temperature			-40~125	℃
T_{stg}	Storage Temperature Range			-40~150	℃

THERMAL CHARACTERISTICS

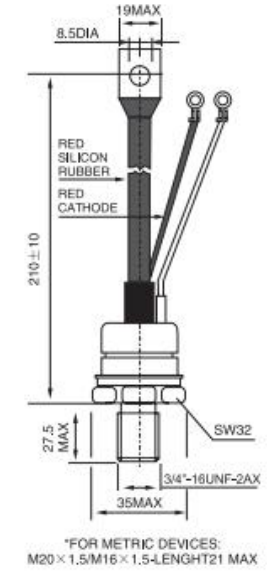
SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j\text{-}c}$	Thermal Resistance, Junction to Case	0.105	℃/W

ELECTRICAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	TYPE	MAX	UNIT
V_{TM}	Forward Voltage Drop	I_{pk} = 570 A, T_J = 125 ℃, t_p = 10 ms sine pulse		1.75	V
I_{DRM} I_{RRM}	Max. peak reverse and off-state leakage current	T_J = T_J maximum, rated V_{DRM}/V_{RRM} applied		30	mA
I_{GT}	DC gate current required to trigger	T_J = -40 ℃	180		mA
		T_J = 25 ℃	90	150	
		T_J = 125 ℃	40		
V_{GT}	DC gate voltage required to trigger	T_J = -40 ℃	2.9		V
		T_J = 25 ℃	1.8	3	
		T_J = 125 ℃	1.2		
t_q	Typical turn-off time	I_{TM} = 300A, T_J = T_J max, di/dt = 20A/μs, V_R = 50V, dv/dt = 20V/μs, Gate 0V 100 Ω, t_p = 500 μ s		100	μs

PACKAGE OUTLINE

Dimensions in mm (1mm = 0.0394“)



Case Style TO-93(ceramic)

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