

# SILICON CONTROLLED RECTIFIER (SCR)

**DESCRIPTION:**

The **2N6508** is a Medium Current SCR for General Purpose Power Control Applications.

**MAXIMUM RATINGS**

$I_T$	25 A (RMS) @ $T_C = 85^\circ\text{C}$ 16 A (AVG) @ $T_C = 25^\circ\text{C}$
$V_{CE}$	600 V
$P_{DISS}$	$P_{GM} = 20\text{ W}$ $P_{G(AVG)} = 0.5\text{ W}$
$T_J$	$-40^\circ\text{C}$ to $+125^\circ\text{C}$
$T_{STG}$	$-40^\circ\text{C}$ to $+150^\circ\text{C}$
$\theta_{JC}$	$1.50^\circ\text{C/W}$

**PACKAGE STYLE TO-220AB**

	DIMENSIONS			
	mm		inches	
	min	max	min	max
A	10	10.4	0.393	0.409
B	15.2	15.9	0.598	0.626
C	12.7	13.7	0.500	0.539
D	6.2	6.6	0.244	0.260
E	4.4	4.6	0.173	0.181
F	3.5	5.5	0.137	0.216
G	2.65	2.95	0.104	0.116
H	17.6 typ.		0.692 typ.	
L	1.14	1.7	0.044	0.067
M	3.75	3.85	0.147	0.151
N	1.23	1.32	0.048	0.051
P	0.41	0.64	0.016	0.025
R	2.4	2.72	0.094	0.107
S	4.95	5.15	0.194	0.203
T	2.4	2.7	0.094	0.106
U	0.61	0.94	0.024	0.037

1: Cathode 2: Anode 3: Gate Tab: Anode

**CHARACTERISTICS**  $T_C = 25^\circ\text{C}$ 

SYMBOL	TEST CONDITIONS	MINIMUM	TYPICAL	MAXIMUM	UNITS
$I_{DRM}/I_{RRM}$	$V_{DRM}/V_{RRM} = 600\text{ V}$ $T_J = 25^\circ\text{C}$			10	$\mu\text{A}$
$I_{DRM}/I_{RRM}$	$V_{DRM}/V_{RRM} = 600\text{ V}$ $T_J = 125^\circ\text{C}$			2.0	$\text{mA}$
$I_{GT}$	$V_D = 12\text{ V}$ $R_L = 100\ \Omega$ $T_C = 25^\circ\text{C}$ $T_C = -40^\circ\text{C}$			40 75	$\text{mA}$ $\text{mA}$
$V_{GT}$	$V_D = 12\text{ V}$ $R_L = 100\ \Omega$ $T_C = -40^\circ\text{C}$			1.50	$\text{V}$
$V_{GD}$	$V_D = 600\text{ V}$ $R_L = 100\ \Omega$ $T_J = 125^\circ\text{C}$	0.2			$\text{V}$
$I_H$	$V_D = 12\text{ V}$ $T_C = -40^\circ\text{C}$			40	$\text{mA}$
$V_{TM}$	$I_{TM} = 50\text{ A (PEAK)}$			1.80	$\text{V}$
$t_{gt}$	$I_{TM} = 25\text{ A}$ $I_{GT} = 50\text{ mA}$			2.0	$\mu\text{S}$
$t_q$	$I_{TM} = 25\text{ A}$ $I_R = 25\text{ A}$ $T_J = 25^\circ\text{C}$ $T_J = 125^\circ\text{C}$		15 35		$\mu\text{S}$ $\mu\text{S}$
$dv/dt$	$V_{DRM} = 600\text{ V}$ GATE OPEN		50		$\text{V}/\mu\text{S}$
$I_{TSM}$	PEAK NON-REPETITIVE SURGE CURRENT $\frac{1}{2}$ CYCLE 1.5 mS			300 350	$\text{A}$ $\text{A}$