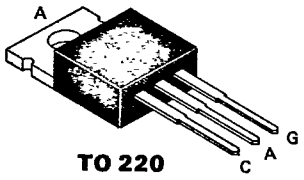
TAG SEMICONDUCTORS LTD



TO 220

S2512BH – S2512NH SCR'S

25 A 200–800 V 25–50 mA

The S2512 series silicon controlled rectifiers are high performance glass passivated PNPN devices. These parts are intended for general purpose high current applications where moderate gate insensitivity is required.

Absolute Maximum Ratings $T_A = 25\,°C$ unless otherwise noted

Parameter	Part Nr.	Symbol	Min.	Max.	Unit	Test Conditions
Repetitive Peak Off State Voltage	S2512BH		200		V	
	S2512DH	V_{DRM}	400		V	$T_j = -40\,°C$ to $125\,°C$
	S2512MH	V_{RRM}	600		V	$R_{GK} = 1\,K\Omega$
	S2512NH		800		V	
On-State Current		$I_{T(RMS)}$	25		A	All Conduction Angles $T_C = 85\,°C$
Average On-State Current		$I_{T(AV)}$	16		A	Half Cycle, $\Theta = 180°$, $T_C = 85\,°C$
Nonrept. On-State Current		I_{TSM}	270		A	Half Cycle, 60 Hz
Nonrept. On-State Current		I_{TSM}	250		A	Half Cycle, 50 Hz
Fusing Current		I^2t	310		A^2s	t = 10 ms, Half Cycle
Peak Gate Current		I_{GM}	4		A	10μs max.
Peak Gate Dissipation		P_{GM}	10		W	10μs max.
Gate Dissipation		$P_{G(AV)}$	1		W	20 ms max.
Operating Temperature		T_j	−40	125	°C	
Storage Temperature		T_{stg}	−40	125	°C	
Soldering Temperature		T_{sld}		250	°C	1.6 mm from case, 10 s max.

Electrical Characteristics $T_A = 25\,°C$ unless otherwise noted

Parameter	Symbol	Min.	Max.	Unit	Test Conditions
Off-State Leakage Current	I_{DRM}/I_{RRM}		2.5	mA	@$V_{DRM} + V_{RRM}$, $R_{GK} = 1\,K\Omega$, $T_j = 125\,°C$
Off-State Leakage Current	I_{DRM}/I_{RRM}		10	μA	@$V_{DRM} + V_{RRM}$, $R_{GK} = 1\,K\Omega$, $T_j = 25\,°C$
On-State Voltage	V_T		1.58	V	at $I_T = 50\,A$, $T_j = 25\,°C$
On-State Threshold Voltage	$V_{T(TO)}$		0.85	V	$T_j = 125\,°C$
On-State Slope Resistance	r_T		16.5	mΩ	$T_j = 125\,°C$
Gate Trigger Current	I_{GT}	25	50	mA	$V_D = 7\,V$
Gate Trigger Voltage	V_{GT}		2.5	V	$V_D = 7\,V$
Holding Current	I_H		75	mA	$R_{GK} = 1\,K\Omega$
Latching Current	I_L		150	mA	$R_{GK} = 1\,K\Omega$
Critical Rate of Voltage Rise	dv/dt	500		V/μs	$V_D = .67 \times V_{DRM}$ $R_{GK} = 1\,K\Omega$ $T_j = 125\,°C$
Critical Rate of Current Rise	di/dt	100		A/μs	$I_G = 250\,mA$ $di_G/dt = 2.5\,A/\mu s$ $T_j = 125\,°C$
Gate Controlled Delay Time	t_{gd}		500	ns	$I_G = 250\,mA$ $di_G/dt = 2.5\,A/\mu s$
Commutated Turn-Off Time	t_q		50	μs	$T_C = 85\,°C$ $V_D = .67 \times V_{DRM}$ $V_R = 35\,V$ $I_T = I_{T(AV)}$
Thermal Resistance junc. to case	$R_{\Theta jc}$		1.55	K/W	
Thermal Resistance junc. to amb.	$R_{\Theta ja}$		60	K/W	

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