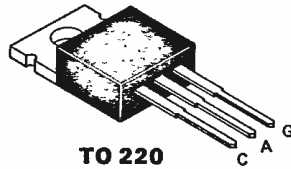


TAG SEMICONDUCTORS LTD

**F0810BH –
F0810NH FAST SCR'S**

8.0 A 200–800 V 10–25 mA

The F0810 series silicon controlled rectifiers are fast, gold doped, glass passivated PNP devices. These parts are intended for general purpose high speed applications.



TO 220

Absolute Maximum Ratings $T_A = 25^\circ\text{C}$ unless otherwise noted

Parameter	Part Nr.	Symbol	Min.	Max.	Unit	Test Conditions
Repetitive Peak Off State Voltage	F0810BH	$\left[\begin{matrix} V_{DRM} \\ V_{RRM} \end{matrix} \right]$	200		V	$\left[\begin{matrix} T_J = -40^\circ\text{C to } 125^\circ\text{C} \\ R_{GK} = 1\text{K}\Omega \end{matrix} \right]$
	F0810DH		400		V	
	F0810MH		600		V	
	F0810NH		800		V	
On-State Current		$I_{T(RMS)}$	8		A	All Conduction Angles $T_C = 85^\circ\text{C}$
Average On-State Current		$I_{T(AV)}$	5.1		A	$T_C = 85^\circ\text{C}$, Half Cycle, $\Theta = 180^\circ$
Nonrept. On-State Current		I_{TSM}	88		A	Half Cycle, 60 Hz
Nonrept. On-State Current		I_{TSM}	80		A	Half Cycle, 50 Hz
Fusing Current		I^2t	32		A^2s	$t = 10\text{ ms}$, Half Cycle
Peak Reverse Gate Voltage		V_{GRM}	8		V	$I_{GR} = 10\ \mu\text{A}$
Peak Gate Current		I_{GM}	2		A	$10\ \mu\text{s}$ max.
Peak Gate Dissipation		P_{GM}	2		W	$10\ \mu\text{s}$ max.
Gate Dissipation		$P_{G(AV)}$	0.5		W	20 ms max.
Operating Temperature		T_J	-40	125	$^\circ\text{C}$	
Storage Temperature		T_{stg}	-40	125	$^\circ\text{C}$	
Soldering Temperature		T_{slid}		250	$^\circ\text{C}$	1.6 mm from case, 10 s max.

Electrical Characteristics $T_A = 25^\circ\text{C}$ unless otherwise noted

Parameter	Symbol	Min.	Max.	Unit	Test Conditions
Off-State Leakage Current	I_{DRM}/I_{RRM}		1.5	mA	$T_J = 125^\circ\text{C}$, @ $V_{DRM} + V_{RRM}$, $R_{GK} = 1\text{K}\Omega$
Off-State Leakage Current	I_{DRM}/I_{RRM}		5	μA	$T_J = 25^\circ\text{C}$, @ $V_{DRM} + V_{RRM}$, $R_{GK} = 1\text{K}\Omega$
On-State Voltage	V_T		1.5	V	at $I_T = 5\text{ A}$, $T_J = 25^\circ\text{C}$
On-State Threshold Voltage	$V_{T(TO)}$		0.95	V	$T_J = 125^\circ\text{C}$
On-State Slope Resistance	r_T		33	m Ω	$T_J = 125^\circ\text{C}$
Gate Trigger Current	I_{GT}	10	25	mA	$V_D = 7\text{ V}$
Gate Trigger Voltage	V_{GT}		2.0	V	$V_D = 7\text{ V}$
Holding Current	I_H		75	mA	$R_{GK} = 1\text{K}\Omega$
Latching Current	I_L		150	mA	$R_{GK} = 1\text{K}\Omega$
Critical Rate of Voltage Rise	dv/dt	400		V/ μs	$V_D = .67 \times V_{DRM}$, $R_{GK} = 1\text{K}\Omega$, $T_J = 125^\circ\text{C}$
Critical Rate of Current Rise	di/dt	100		A/ μs	$I_G = 125\text{ mA}$, $di_G/dt = 1.25\text{ A}/\mu\text{s}$, $T_J = 125^\circ\text{C}$
Gate Controlled Delay Time	t_{gd}		500	ns	$I_G = 125\text{ mA}$, $di_G/dt = 1.25\text{ A}/\mu\text{s}$
Commutated Turn-Off Time	t_q		15	μs	$T_C = 85^\circ\text{C}$, $V_D = .67 \times V_{DRM}$, $V_R = 35\text{ V}$, $I_T = I_{T(AV)}$
Thermal Resistance junc. to case	$R_{\theta jc}$		3	K/W	
Thermal Resistance junc. to amb.	$R_{\theta ja}$		60	K/W	