THYRISTOR
SILICON DIFFUSED TYPE

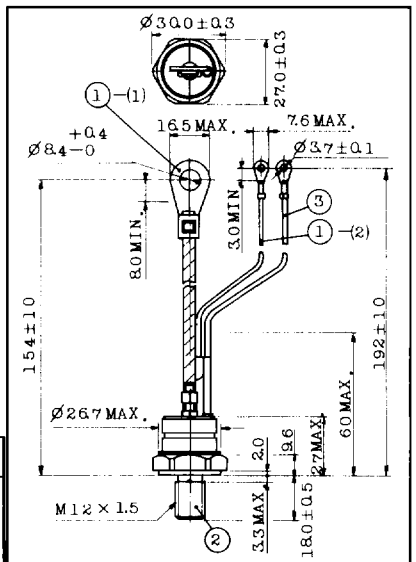
SF80(D,G,J)15

HIGH POWER CONTROL APPLICATIONS.

FEATURES:

. Repetitive Peak Off-State Voltage : V_{DRM}
  Repetitive Peak Reverse Voltage : V_{RRM} } =200 ~ 600V
. Average On-State Current : $I_{T(AV)}$=80A
. Critical Rate of Rise of On-State Current
  : di/dt=100A/μs
. Critical Rate of Rise of Off-State Voltage
  : dv/dt=200V/μs

Unit in mm



JEDEC	—
EIAJ	—
TOSHIBA	13-27B1A

Weight : 105g

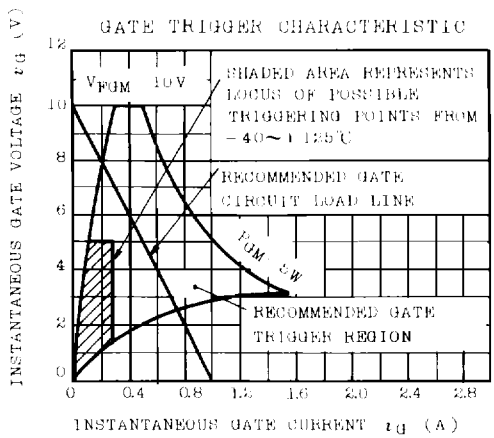
MAXIMUM RATINGS

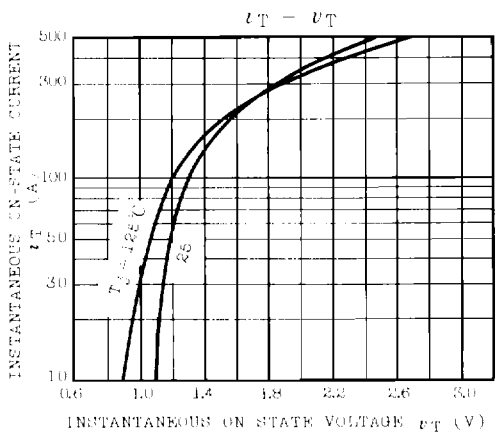
CHARACTERISTIC		SYMBOL	RATING	UNIT
Repetitive Peak Off-State Voltage and Repetitive Peak Reverse Voltage	SF80D15	V_{DRM} V_{RRM}	200	V
	SF80G15		400	
	SF80J15		600	
Non-Repetitive Peak Reverse Voltage (Non-Repetitive <5ms, Tj=0 ~ 125°C)	SF80D15	V_{RSM}	300	V
	SF80G15		500	
	SF80J15		700	
R.M.S On-State Current		$I_{T(RMS)}$	126	A
Average On-State Current (Half Sine Waveform Tc=87°C)		$I_{T(AV)}$	80	A
Peak One Cycle Surge On-State Current (Non-Repetitive)		I_{TSM}	1500(50Hz)	A
			1650(60Hz)	
I^2t Limit Value		I^2t	11.2×10^3	A^2s
Critical Rate of Rise of On-State Current (Note)		di/dt	100	A/μs
Peak Gate Power Dissipation		P_{GM}	5	W
Average Gate Power Dissipation		$P_{G(AV)}$	0.5	W
Peak Forward Gate Current		I_{GM}	2	A
Peak Forward Gate Voltage		V_{FGM}	10	V
Peak Reverse Gate Voltage		V_{RGM}	5	V
Junction Temperature		T_j	-40 ~ 125	°C
Storage Temperature Range		T_{stg}	-40 ~ 125	°C
Stud Torque		-	110	kg·cm

Note: V_D=1/2 Rated, Tc=120°C, Gate Supply (V_G=10V, R_G=10Ω, $t_r \leqq 1\mu s$)

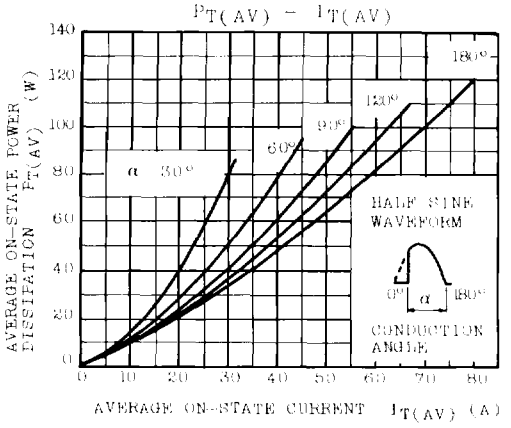
ELECTRICAL CHARACTERISTICS

CHARACTERISTIC	SYMBOL	TEST CONDITION		MIN.	MAX.	UNIT
Repetitive Peak Off-State Current and Repetitive Peak Reverse Current	I_{DRM} I_{RRM}	$V_{DRM}=V_{RRM}$=Rated, $T_j=125^oC$		-	15	mA
Peak On-State Voltage	V_{TM}	I_{TM}=250A, $T_c=25^oC$		-	1.70	V
Gate Trigger Voltage	V_{GT}	V_D=6V, R_L=6Ω	$T_c=-40^oC$	-	5	V
			$T_c=25^oC$	-	3	
Gate Trigger Current	I_{GT}		$T_c=-40^oC$	-	300	mA
			$T_c=25^oC$	-	150	
Gate Non-Trigger Voltage	V_{GD}	V_D=1/2 Rated, $T_c=125^oC$		0.15	-	V
Gate Non-Trigger Current	I_{GD}			1.5	-	mA
Delay Time	t_d	V_D=0.5 Rated, $T_c=25^oC$ Gate Supply (V_G=10V, R_G=10Ω, $t_r \leq 1\mu s$)		-	4	μs
Gate Turn-On Time	t_{gt}			-	6	μs
Holding Current	I_H	$T_c=25^oC$, R_L=6Ω		-	200	mA
Critical Rate of Rise of Off-State Voltage	dv/dt	V_{DRM}=2/3 Rated, $T_j=125^oC$ Gate Open, Exponential Rise		200	-	V/μs
Thermal Resistance	$R_{th(j-c)}$	Junction to Case		-	0.3	$^oC/W$

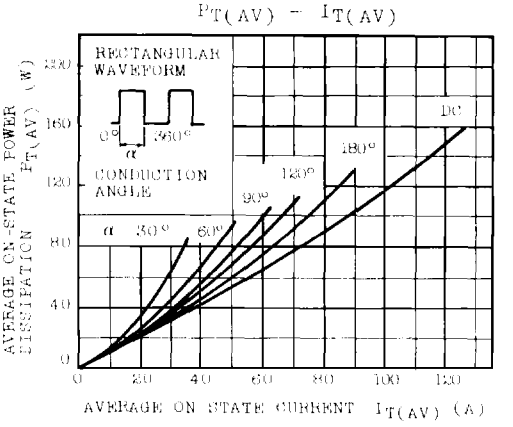




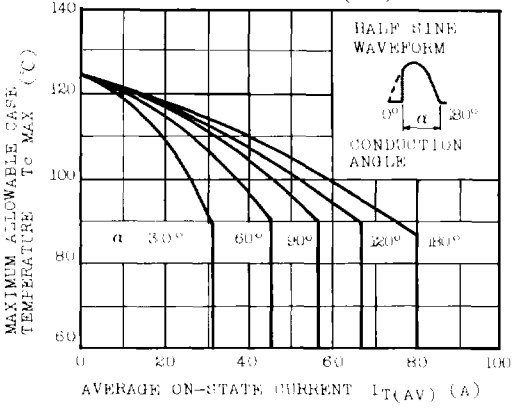
$P_{T(AV)} - I_{T(AV)}$



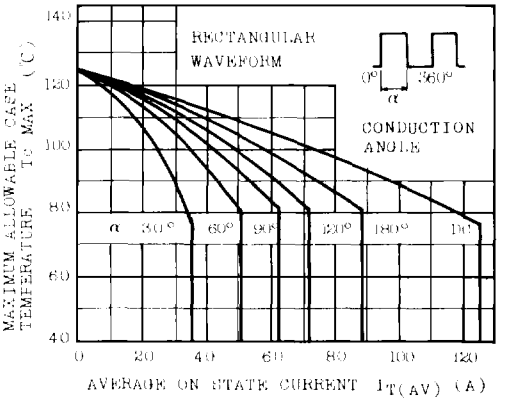
$P_{T(AV)} - I_{T(AV)}$



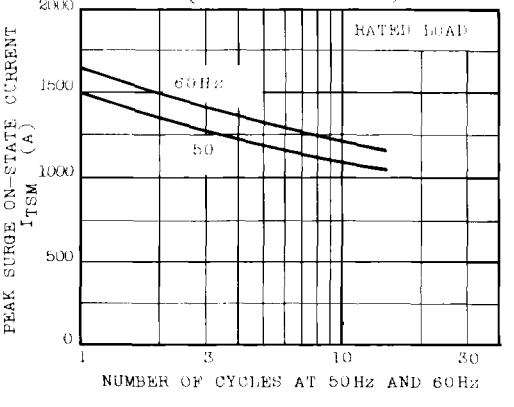
T_C MAX $- I_{T(AV)}$



T_C MAX $- I_{T(AV)}$



SURGE ON STATE CURRENT (NON-REPETITIVE)



TRANSIENT THERMAL IMPEDANCE (JUNCTION TO CASE)