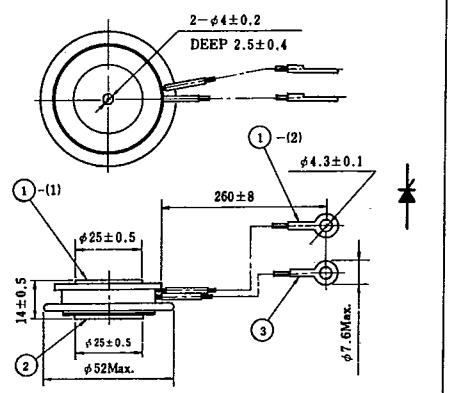
PHASE CONTROL THYRISTOR

SF250U21 1600V 250A

Unit in mm



①−(1) CATHODE
①−(2) CATHODE (BLACK)
② ANODE
③ GATE (WHITE)

TOSHIBA 13−52C1A

MAXIMUM RATINGS

CHARACTERISTIC		SYMBOL	RATING	UNIT
Repetitive Peak Off-State Voltage and Repetitive Peak Reverse Voltage	SF250G21	V_{DRM} and V_{RRM}	400	V
	SF250J21		600	
	SF250L21		800	
	SF250N21		1000	
	SF250Q21		1200	
	SF250R21		1300	
	SF250U21		1600	
Non-Repetitive Peak Reverse Voltage (Non-Rep <5ms) T_j=0~125℃	SF250G21	V_{RSM}	500	V
	SF250J21		720	
	SF250L21		960	
	SF250N21		1200	
	SF250Q21		1450	
	SF250R21		1500	
	SF250U21		1850	
R.M.S On-State Current		$I_{T(RMS)}$	393	A
Average On-State Current (Half Sine Waveform)		$I_{T(AV)}$	250	A
Peak One Cycle Surge On-State Current (Non-Repetitive)		I_{TSM}	5500(60Hz)	A
			5000(50Hz)	
I^2t Limit Value		I^2t	125×10^3	A^2s
Critical Rate of Rise of On-State Current (Note1)		di/dt	100	A/μs
Peak Gate Powar Dissipation		P_{GM}	16	W
Average Gate Power Dissipation		$P_{G(AV)}$	3	W
Peak Forward Gate Current		I_{GM}	4	A
Peak Forward Gate Voltage		V_{FGM}	16	V
Peak Reverse Gate Voltage		V_{RGM}	−5	V
Junction Temperature		T_j	−40~125	℃
Storage Temperature Range		T_{stg}	−40~125	℃
Mounting Force Required (Note 2)			600~800	kg

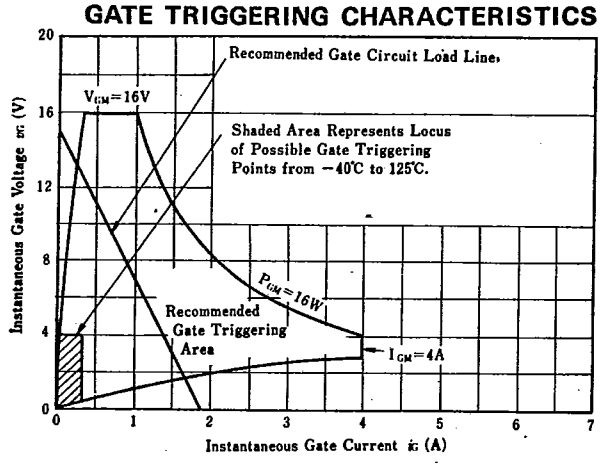
Note 1 : V_D=0.5Rated, Tc=120℃, Gate Supply (V_G=15V, R_G=8Ω, $t_r \leqq 1\mu s$)
Note 2 : Recommended value; 700±50kg

ELECTRICAL CHARACTERISTICS

CHARACTERISTIC	SYMBOL	CONDITION		MIN.	MAX.	UNIT
Repetitive Peak Off-State Current and Repetitive Peak Reverse Current	I_{DRM} and I_{RRM}	$V_{DRM}=V_{RRM}$=Rated, T_j=125℃		−	20	mA
Peak On-State Voltage	V_{TM}	I_{TM}=780 A, T_c=25℃		−	1.80	V
Gate Trigger Voltage	V_{GT}	V_D=6V, R_L=6Ω	T_c=−40℃	−	4	V
			T_c=25℃	−	3	
Gate Trigger Current	I_{GT}		T_c=−40℃	−	300	mA
			T_c=25℃	−	150	
Gate Non-Trigger Voltage	V_{GD}	V_D=0.5Rated, T_c=125℃		0.15	−	V
Gate Non-Trigger Current	I_{GD}			1.5	−	mA
Turn-On Time	t_{gt}	V_D=0.5Rated		−	6	μs
Delay Time	t_d	T_c=25℃, Gate Supply (V_G=10V, R_G=8Ω, $t_r \leqq 1\mu s$)		−	4	μs
Holding Current	I_H	T_c=25℃, R_L=6Ω		−	200	mA
Critical Rate of Rise of Off-State Voltage	dv/dt	V_{DRM}=⅔Rated, T_j=125℃, Gate open, Exponential rise		200	−	V/μs
Thermal Resistance *	$R_{th(j-f)}$	DC		−	0.1	℃/W

* Junction to Fin

GATE TRIGGERING CHARACTERISTICS



$T_{f\,MAX} - I_{T(AV)}$