

HIGH-SPEED THYRISTOR

TOSHIBA (DISCRETE/OPTO)

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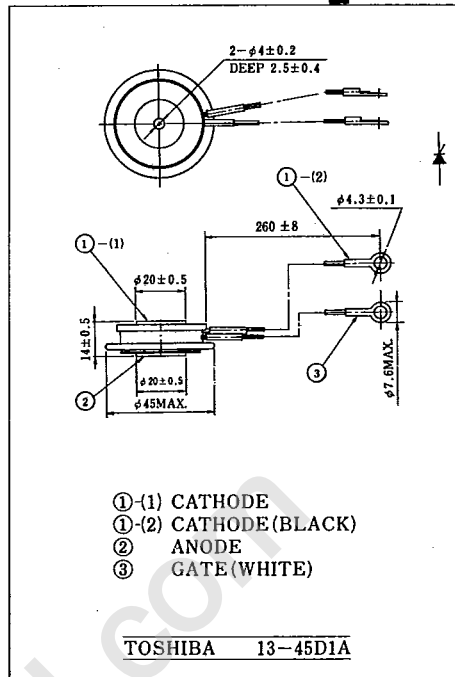
Unit in mm

SH100L21A

800V 100A

MAXIMUM RATINGS

CHARACTERISTIC	SYMBOL	RATING	UNIT
Repetitive Peak Off-State Voltage and Repetitive Peak Reverse Voltage	SH100D21A	200	V
	SH100F21A	300	
	SH100G21A	400	
	SH100J 21A	600	
	SH100L21A	800	
Non-Repetitive Peak Reverse Voltage (Non-Rep < 5ms) T _j =0~125°C	SH100D21A	300	V
	SH100F21A	400	
	SH100G21A	500	
	SH100J 21A	620	
	SH100L21A	960	
R.M.S On-State Current	I _{T(RMS)}	157	A
Average On-State Current (Half Sine Wave form)	I _{T(AV)}	100	A
Peak One Cycle Surge On-State Current (Non-Repetitive)	I _{TSM}	2200(60Hz)	A
		2000(50Hz)	
I ² t Limit Value	I ² t	20×10 ³	A ² s
Critical Rate of Rise of On-State Current (Note 1)	di/dt	200	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
Mounting Force Required (Note 2)		400~600	kg



Note 1: V_D=Rated, T_c=120°C, Gate Supply (V_G=10V, R_G=10Ω, t_r≤1μs) Note 2: Recommended value; 500±50kg

ELECTRIC CHARACTERISTIC

CHARACTERISTIC	SYMBOL	CONDITION	MIN.	MAX.	UNIT
Repetitive Peak Off-State Current and Repetitive Peak Reverse Current	I _{DRM} and I _{RRM}	V _{DRM} =V _{RDM} =Rated, T _j =125°C	-	30	mA
Peak On-State Voltage	V _{TM}	I _{TM} =320A, T _c =25°C	-	1.9	V
Gate Trigger Voltage	V _{GT}	V _D =6V, R _L =6Ω	T _c =-40°C	3.7	V
Gate Trigger Current	I _{GT}		T _c =25°C	3.0	
			T _c =-40°C	300	
			T _c =25°C	150	
Gate Non-Trigger Voltage	V _{GD}	V _D =Rated, T _c =125°C	0.15	-	V
Gate Non-Trigger Current	I _{GD}	V _D =Rated, T _c =125°C	1.5	-	mA
Turn-On Time	t _{gt}	V _D =0.5Rated, T _c =25°C, Gate Supply (V _G =10V, R _G =10Ω, t _r ≤1μs)	-	6	μs
Delay Time	t _d	V _D =0.5Rated, T _c =25°C, Gate Supply (V _G =10V, R _G =10Ω, t _r ≤1μs)	-	4	μs
Turn-Off Time	t _q	I _T =200A, V _R ≥50V, dv/dt=20V/μs, T _c =120°C, V _{DRM} (reapplied)=Rated	-	15	μs
Holding Current	I _H	T _c =25°C R _L =6Ω	-	200	mA
Critical Rate of Rise of Off-State Voltage	dv/dt	V _{DRM} =Rated, T _j =125°C, Gate open, Exponential rise	200	-	V/μs
Thermal Resistance*	R _{th(j-0)}	DC	-	0.2	°C/W

* Junction to Fin

GATE TRIGGERING CHARACTERISTICS

