

SF5G49, SF5J49, USF5G49, USF5J49

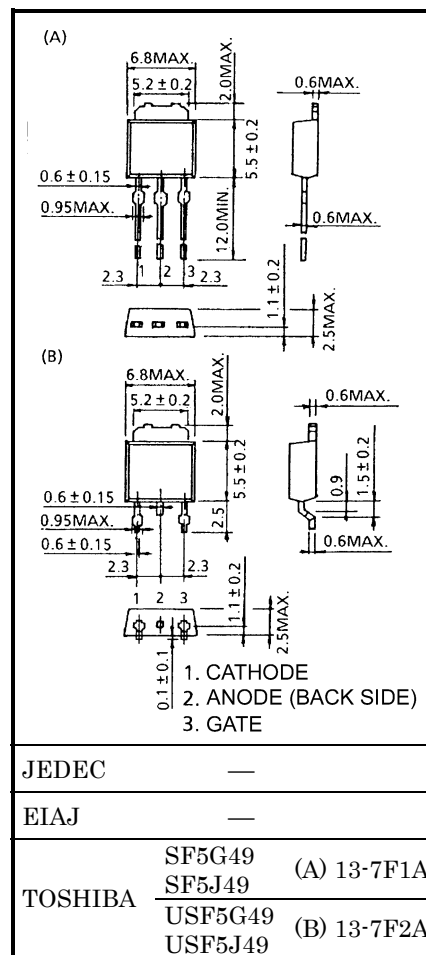
Medium Power Control Applications

Unit in mm

- Repetitive peak off-state voltage: $V_{DRM} = 400, 600 \text{ V}$
Repetitive peak reverse voltage: $V_{RRM} = 400, 600 \text{ V}$
- Average on-state current: $I_T (AV) = 5 \text{ A}$
- Gate trigger current: $I_{GT} = 70 \mu\text{A max}$

Maximum Ratings

Characteristics	Symbol	Rating	Unit
Repetitive peak off-state voltage and Repetitive peak reverse voltage ($R_{GK} = 330 \Omega$)	SF5G49 USF5G49	V_{DRM}	V
	SF5J49 USF5J49	V_{RRM}	
Non-repetitive peak reverse voltage (non-repetitive < 5 ms, $T_j = 0 \sim 125^\circ\text{C}$, $R_{GK} = 330 \Omega$)	SF5G49 USF5G49	V_{RSM}	V
	SF5J49 USF5J49	V_{RSM}	
Average on-state current	$I_T (AV)$	5	A
R.M.S on-state current	$I_T (RMS)$	7.8	A
Peak one cycle surge on-state current (non-repetitive)	I_{TSM}	65 (50 Hz)	A
$I^2 t$ limit value	$I^2 t$	20	A^2s
Peak gate power dissipation	P_{GM}	0.5	W
Average gate power dissipation	$P_G (AV)$	0.05	W
Peak forward gate voltage	V_{FGM}	5	V
Peak reverse gate voltage	V_{RGM}	-5	V
Peak forward gate current	I_{GM}	200	mA
Junction temperature	T_j	-40~125	$^\circ\text{C}$
Storage temperature range	T_{stg}	-40~125	$^\circ\text{C}$



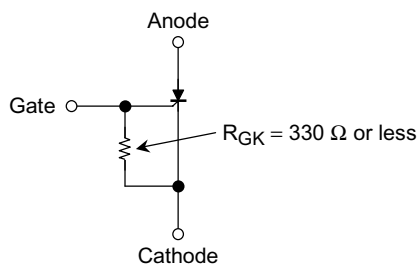
Weight: (A) 0.36 g (typ.)

(B) 0.28 g (typ.)

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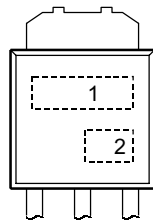
Note: Should be used with gate resistance as follows



Electrical Characteristics (Ta = 25°C)

Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Repetitive peak off-state current and Repetitive peak reverse current	I_{DRM} I_{RRM}	$V_{DRM} = V_{RRM} = \text{Rated}$ $R_{GK} = 330\ \Omega$	—	—	20	μA
Peak on-state voltage	V_{TM}	$I_{TM} = 12\ \text{A}$	—	—	1.6	V
Gate trigger voltage	V_{GT}	$V_D = 6\ \text{V}$, $R_L = 100\ \Omega$ $R_{GK} = 330\ \Omega$	—	—	0.8	V
Gate trigger current	I_{GT}		3	—	70	μA
Gate non-trigger voltage	V_{GD}	$V_D = \text{Rated} \times 2/3$, $T_c = 125^\circ\text{C}$	0.2	—	—	V
Critical rate of rise of off-state voltage	dv/dt	$V_{DRM} = \text{Rated} \times 2/3$, $T_c = 75^\circ\text{C}$ $R_{GK} = 330\ \Omega$, Exponential rise	—	50	—	V/ μs
Holding current	I_H	$R_L = 100\ \Omega$, $R_{GK} = 330\ \Omega$	—	2.5	—	mA
Thermal resistance (junction to case)	$R_{th(j-c)}$	DC	—	—	6.0	$^\circ\text{C/W}$

Marking



1	Mark	F5G49	Type Name	SF5G49, USF5G49
		F5J49		SF5J49, USF5J49
2	Lot Number			
	Month (starting from alphabet A) Year (last decimal digit of the current year)			

