

SF5G49, SF5J49, USF5G49, USF5J49

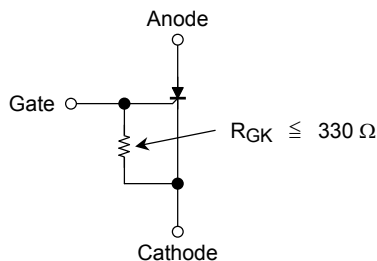
Medium Power Control Applications

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

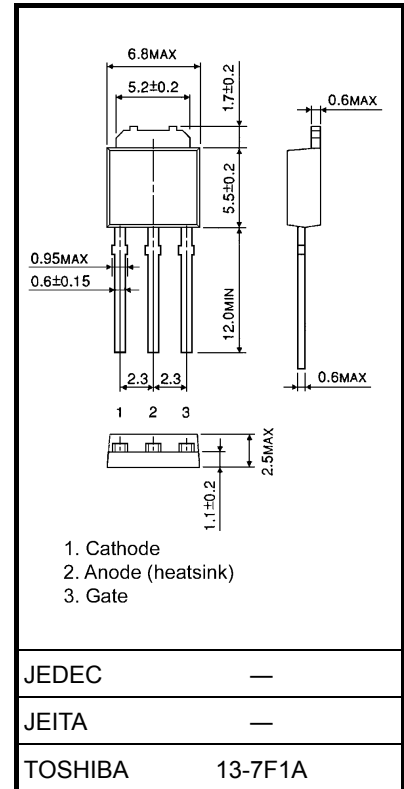
Maximum Ratings

Characteristics	Symbol	Rating	Unit
Repetitive peak off-state voltage and Repetitive peak reverse voltage ($R_{GK} = 330 \Omega$)	SF5G49 USF5G49	400	V
	SF5J49 USF5J49	600	
Non-repetitive peak reverse voltage (non-repetitive < 5 ms, $T_j = 0\sim 125^\circ C$, $R_{GK} = 330 \Omega$)	SF5G49 USF5G49	500	V
	SF5J49 USF5J49	720	
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^2t limit value	I^2t	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	$^\circ C$
Storage temperature range	T_{stg}	-40~125	$^\circ C$

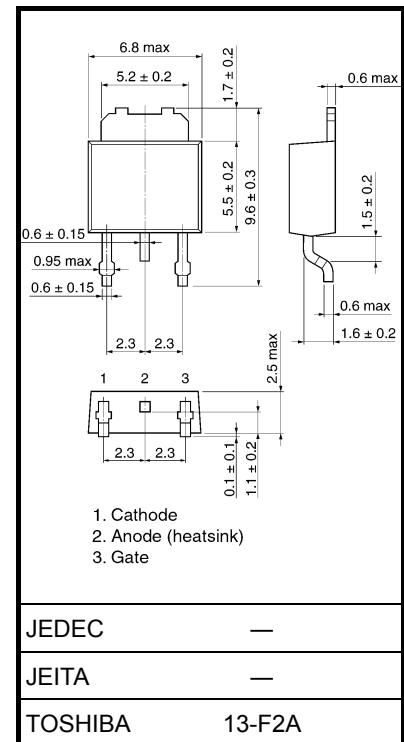
Note: Should be used with gate resistance as shown below:



Unit: mm



Weight: 0.36 g (typ.)

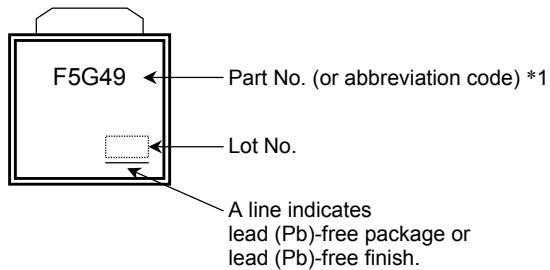


Weight: 0.28 g (typ.)

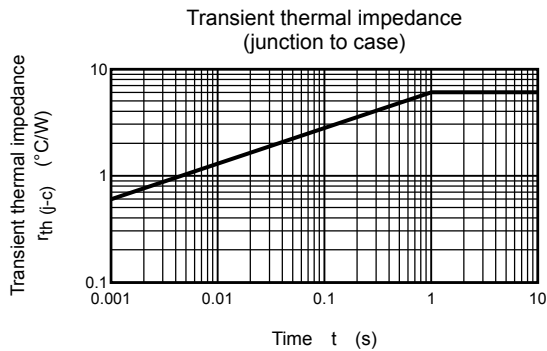
Electrical Characteristics (Ta = 25°C)

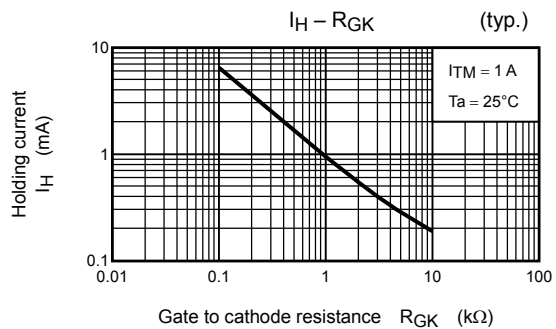
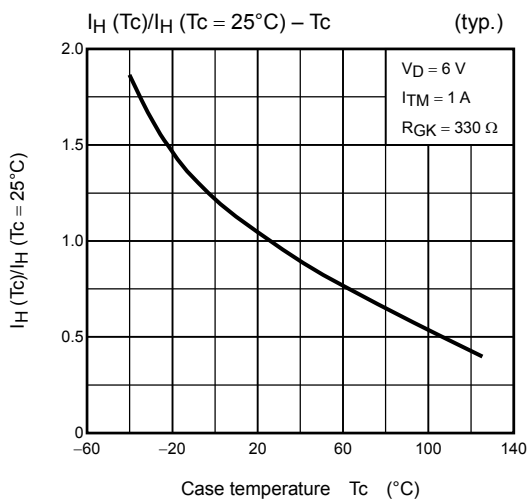
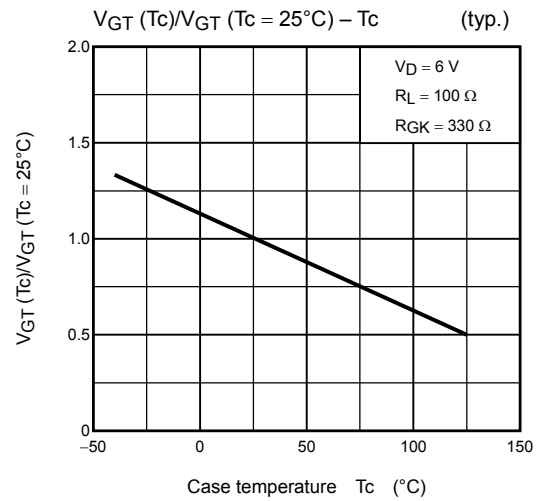
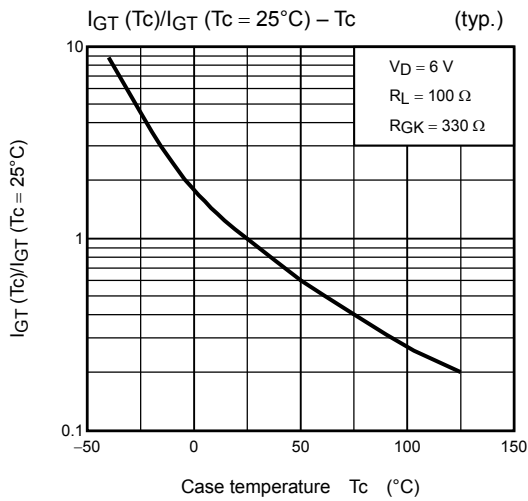
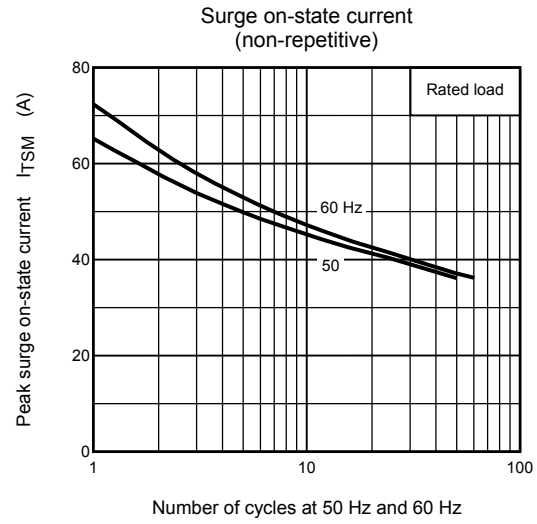
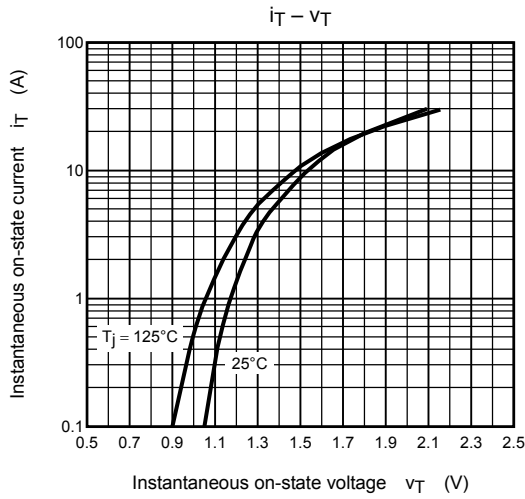
Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Repetitive peak off-state current and Repetitive peak reverse current	I_{DRM} I_{RRM}	$V_{DRM} = V_{RRM} = \text{Rated}$ $R_{GK} = 330 \Omega$	—	—	20	μA
Peak on-state voltage	V_{TM}	$I_{TM} = 12 \text{ A}$	—	—	1.6	V
Gate trigger voltage	V_{GT}	$V_D = 6 \text{ V}, R_L = 100 \Omega$ $R_{GK} = 330 \Omega$	—	—	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	$V_{DRM} = \text{Rated} \times 2/3, T_c = 75^\circ\text{C}$ $R_{GK} = 330 \Omega, \text{Exponential rise}$	—	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	$^\circ\text{C/W}$

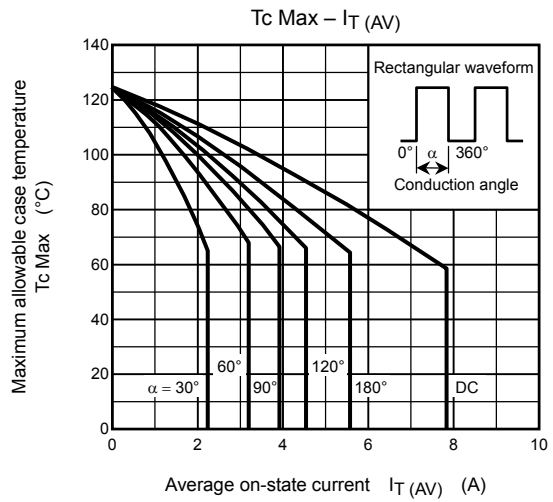
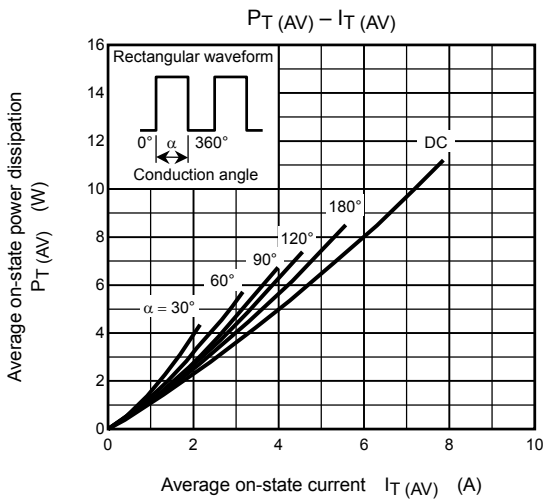
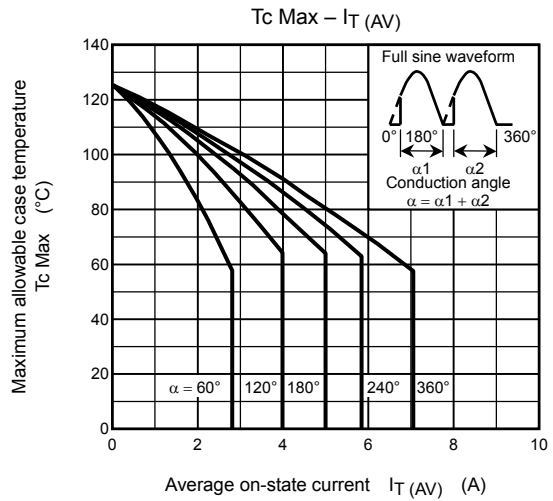
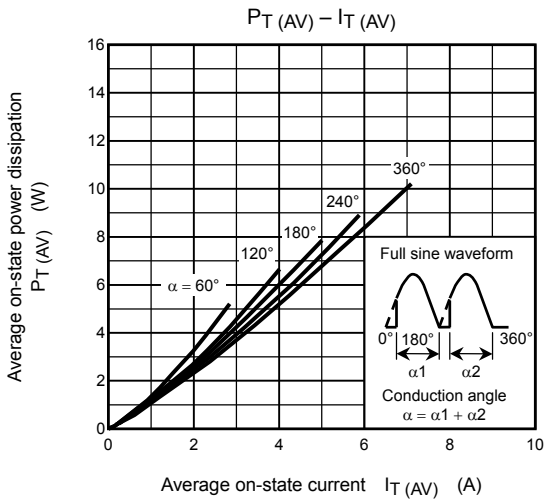
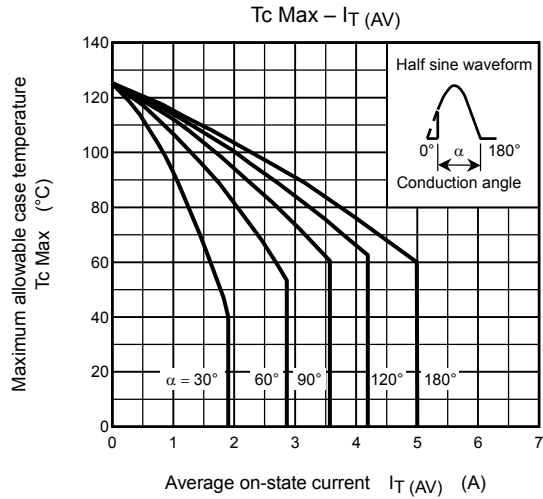
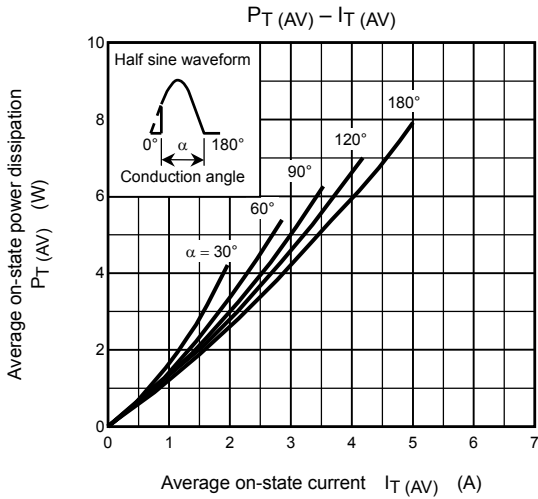
Marking

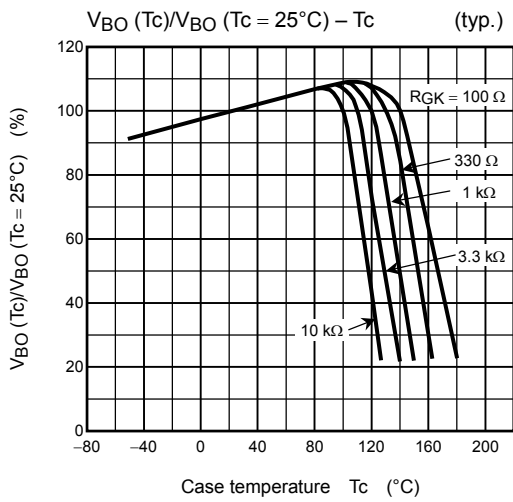
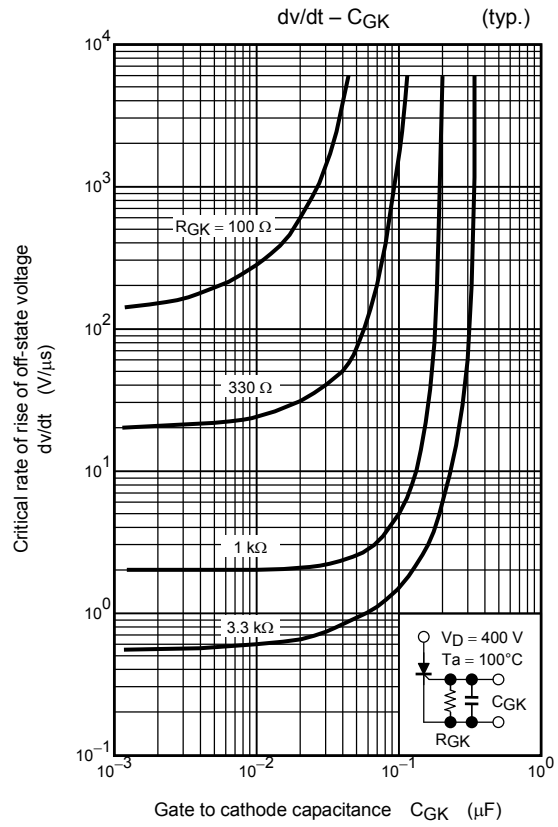
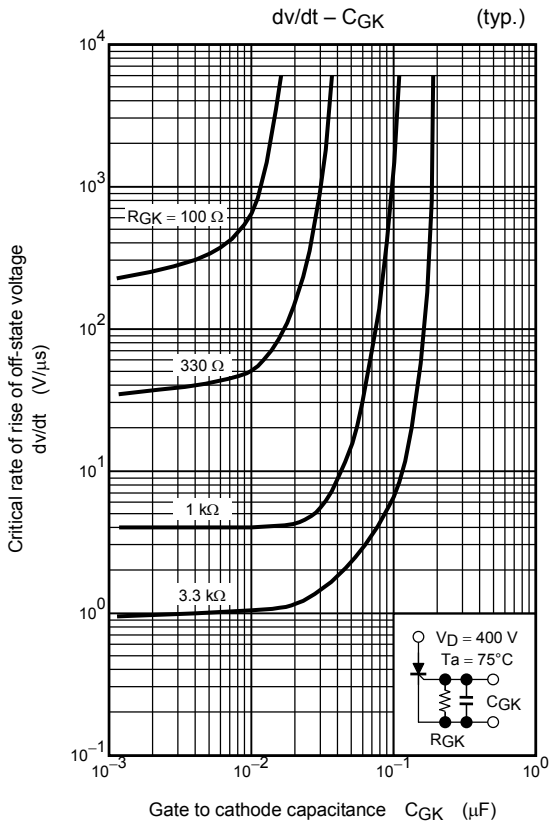


*1	Part No. (or abbreviation code)	Part No.
	F5G49	SF5G49, USF5G49
	F5J49	SF5J49, USF5J49









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20070701-EN

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