

●Serie

Standard Fast Recovery

●Application

General rectification

For PFC

(CCM : Continuous Current Mode)

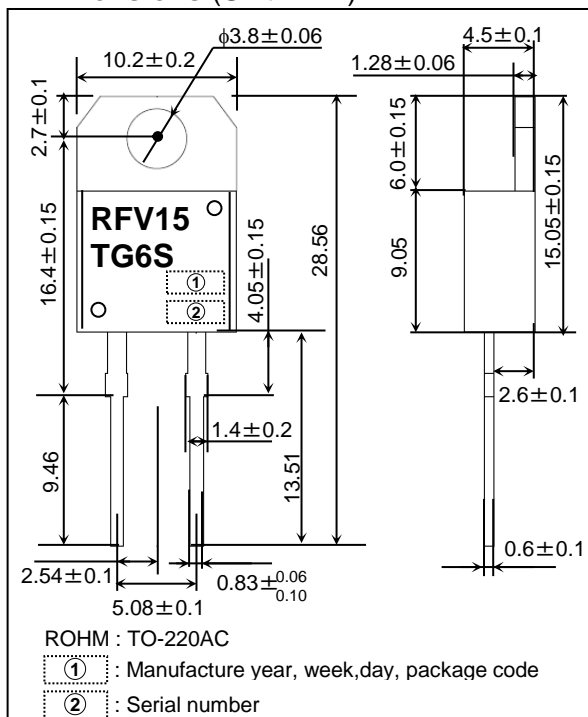
●Features

- 1) Hyper fast recovery / Hard recovery type
- 2) Ultra low switching loss
- 3) High current overload capacity

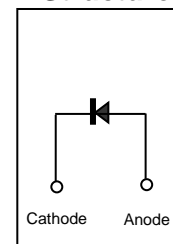
●Construction

Silicon epitaxial planar type

●Dimensions (Unit : mm)



●Structure



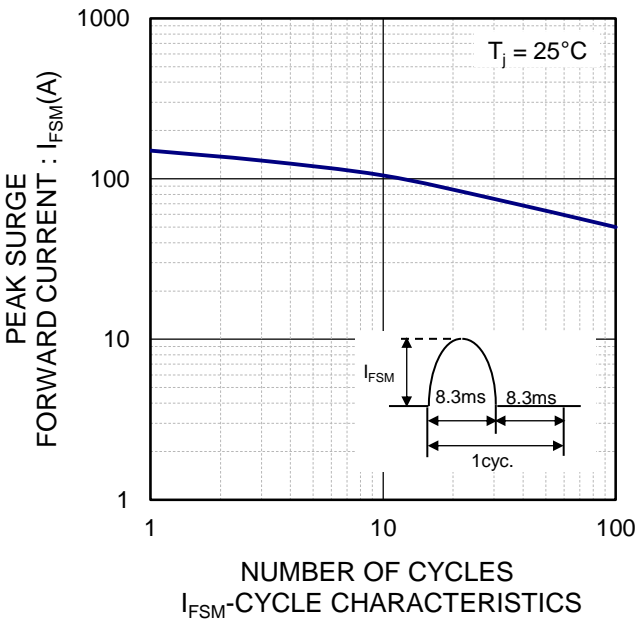
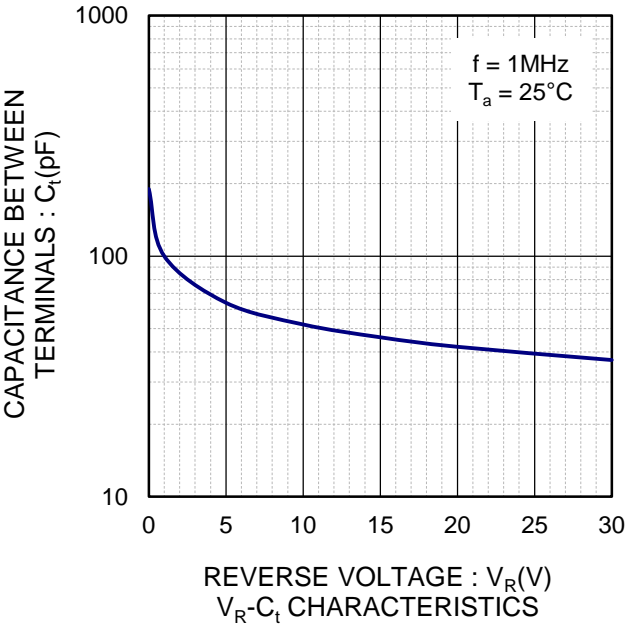
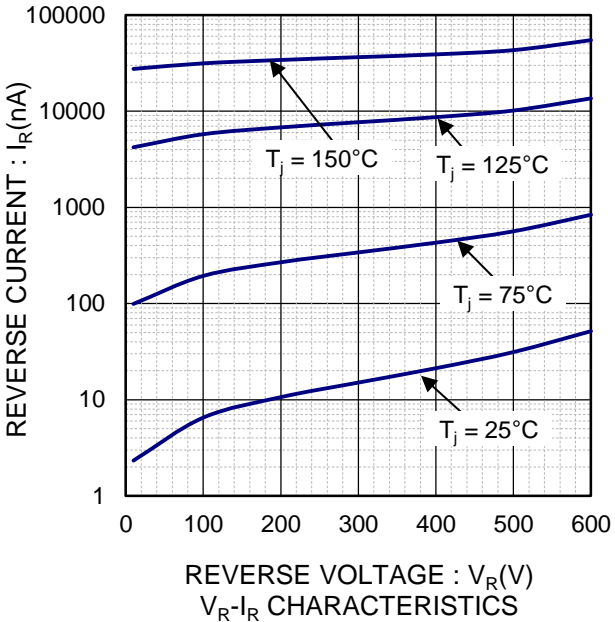
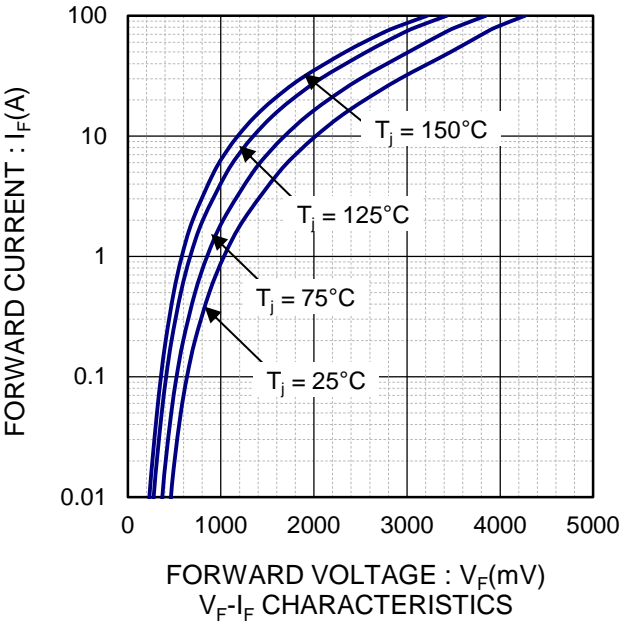
●Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

Parameter	Symbol	Conditions	Limits	Unit
Repetitive peak reverse voltage	V_{RM}	Duty ≤ 0.5	600	V
Reverse voltage	V_R	Direct reverse voltage	600	V
Average current	I_o	60Hz half sin wave, resistive load	15	A
Non-repetitive forward surge current	I_{FSM}	60Hz half sin wave, one cycle, non-repetitive at $T_j = 25^\circ\text{C}$	150	A
Operating junction temperature	T_j	-	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-	-55 to +150	$^\circ\text{C}$

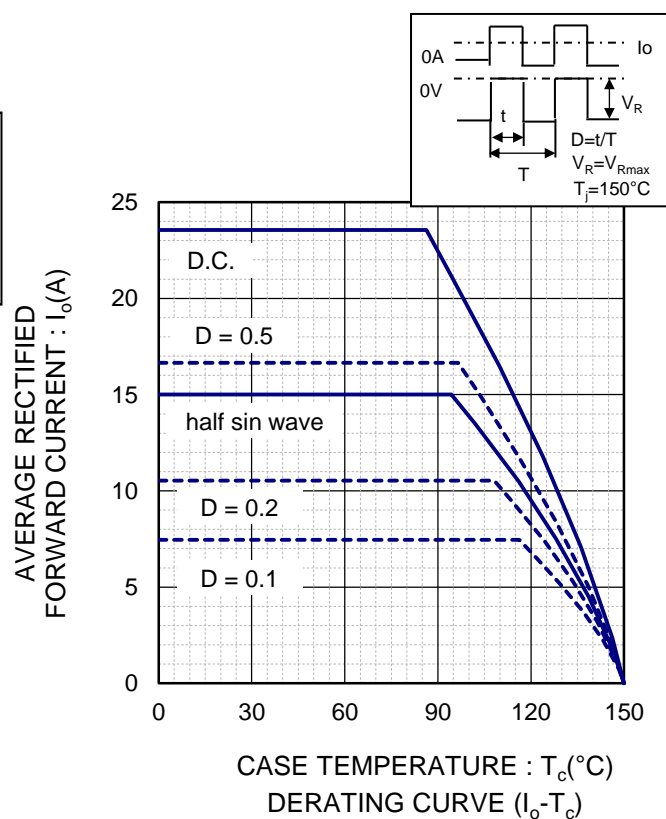
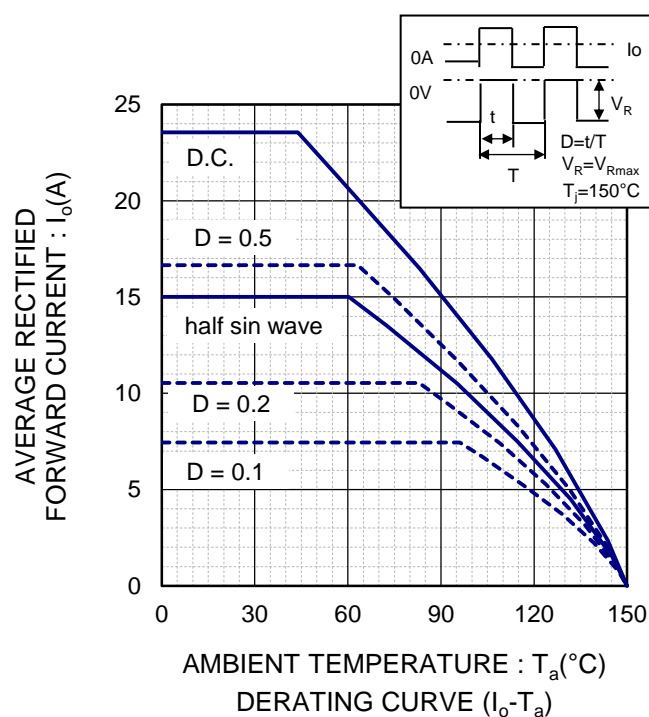
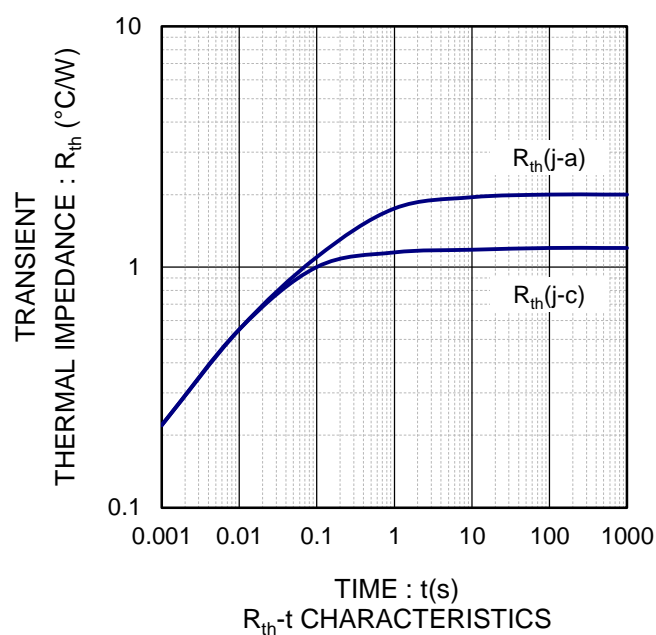
●Electrical Characteristics ($T_j = 25^\circ\text{C}$)

Parameter	Symbol	Conditions		Min.	Typ.	Max.	Unit
Forward voltage	V_F	$I_F=15A$	$T_j=25^{\circ}C$	1.6	2.3	2.8	V
			$T_j=125^{\circ}C$	-	1.55	-	V
Reverse current	I_R	$V_R=600V$	$T_j=25^{\circ}C$	-	0.03	10	μA
			$T_j=125^{\circ}C$	-	10	200	μA
Reverse recovery time	t_{rr}	$I_F=0.5A, I_R=1A, I_{rr}=0.25\times I_R$		-	20	30	ns
		$I_F=15A, V_R=400V, dI_F/dt=-200A/\mu s$		-	30	50	ns
Reverse recovery current	I_{Rp}	$I_F=15A, V_R=400V$	$T_j=125^{\circ}C$	-	6.5	-	A
Reverse recovery charges	Q_{rr}	$dI_F/dt=-200A\mu s$		-	200	-	nC
Forward recovery time	t_{fr}	$I_F=15A, dI_F/dt=200A/\mu s,$		-	150	-	ns
Forward recovery voltage	V_{Fp}	$V_{FR}=1.1\times V_{Fmax}$		-	5.5	-	V
Thermal resistance	$R_{th(j-a)}$	Junction to ambient		-	-	2.0	$^{\circ}C/W$
	$R_{th(j-c)}$	Junction to case		-	-	1.2	$^{\circ}C/W$

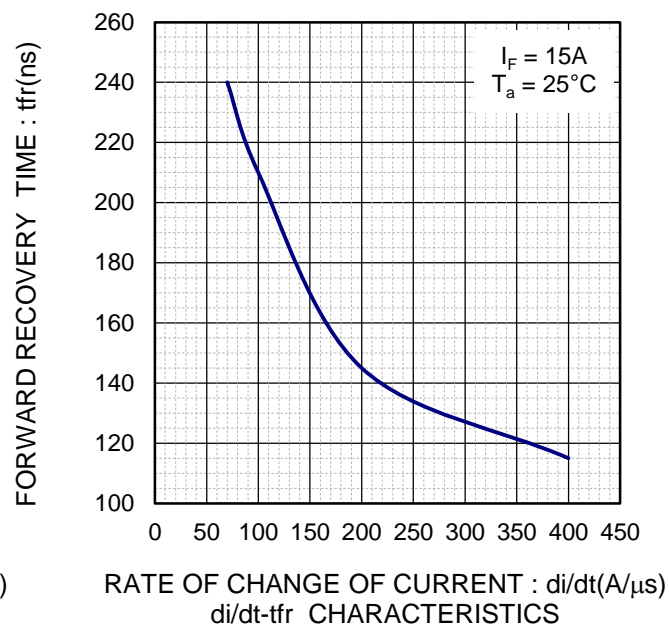
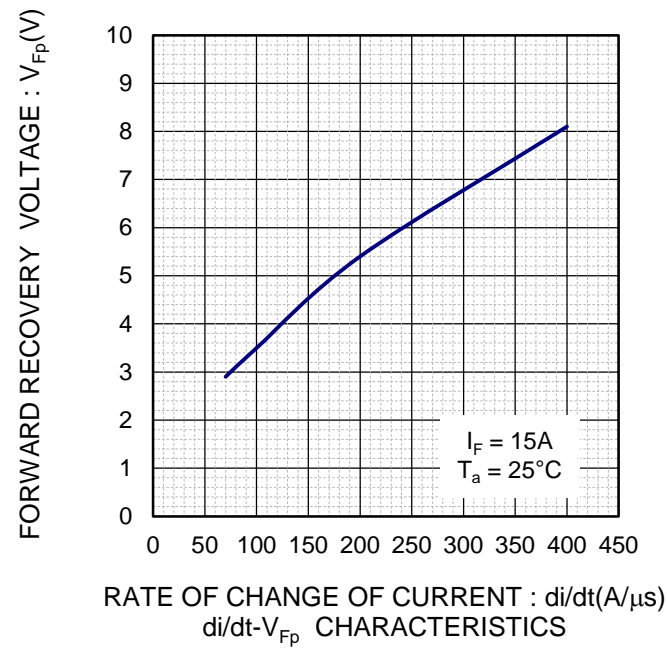
●Electrical Characteristic Curves



The graph shows the relationship between Peak Current (I_{FSM}) and Time (t) for the I_{FSM} - t characteristics at $T_J = 25^\circ\text{C}$. The y-axis is logarithmic, representing Peak Current in Amperes (A), ranging from 1 to 1000. The x-axis is logarithmic, representing Time in milliseconds (ms), ranging from 1 to 100. A solid blue curve shows that the peak current decreases as the time duration increases. An inset diagram illustrates the pulse waveform, showing a rectangular pulse with a constant current level I_{FSM} over a duration of time.



●Electrical characteristic curves



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