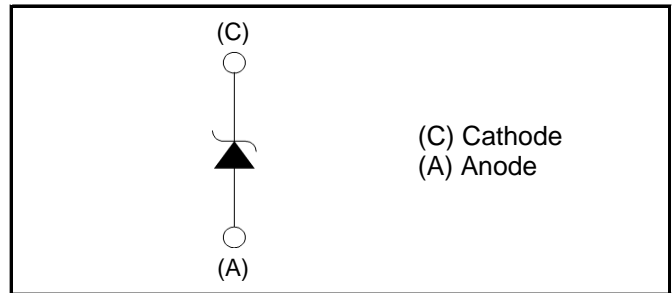


$V_R$	650V
$I_F$	12A* <sup>1</sup>
$Q_C$	18nC

### ●Features

- 1) Shorter recovery time
- 2) Reduced temperature dependence
- 3) High-speed switching possible

### ●Inner circuit



### ●Construction

Silicon carbide epitaxial planer type

Schottky diode

### ●Absolute maximum ratings (T<sub>j</sub> = 25°C)

Parameter	Symbol	Value	Unit
Reverse voltage (repetitive peak)	$V_{RM}$	650	V
Reverse voltage (DC)	$V_R$	650	V
Continuous forward current	$I_F$	12* <sup>1</sup>	A
Surge no repetitive forward current	$I_{FSM}$	45* <sup>2</sup>	A
		170* <sup>3</sup>	A
		36* <sup>4</sup>	A
Repetitive peak forward current	$I_{FRM}$	49* <sup>5</sup>	A
Junction temperature	T <sub>j</sub>	175	°C
Range of storage temperature	T <sub>stg</sub>	-55 to +175	°C

\*1 Limited by T<sub>j</sub> \*2 PW=8.3ms sinusoidal, T<sub>j</sub>=25°C \*3 PW=10μs square, T<sub>j</sub>=25°C

\*4 PW=8.3ms sinusoidal, T<sub>j</sub>=150°C \*5 Duty cycle=10%, limited by T<sub>j</sub>

**●Electrical characteristics (T<sub>j</sub> = 25°C)**

Parameter	Symbol	Conditions	Values			Unit
			Min.	Typ.	Max.	
DC blocking voltage	V <sub>DC</sub>	I <sub>R</sub> =0.24mA	600	-	-	V
Forward voltage	V <sub>F</sub>	I <sub>F</sub> =12A, T <sub>j</sub> =25°C	-	1.35	1.55	V
		I <sub>F</sub> =12A, T <sub>j</sub> =150°C	-	1.55	-	V
		I <sub>F</sub> =12A, T <sub>j</sub> =175°C	-	1.63	-	V
Reverse current	I <sub>R</sub>	V <sub>R</sub> =600V, T <sub>j</sub> =25°C	-	2.4	240	μA
		V <sub>R</sub> =600V, T <sub>j</sub> =150°C	-	36	-	μA
		V <sub>R</sub> =600V, T <sub>j</sub> =175°C	-	84	-	μA
Total capacitance	C	V <sub>R</sub> =1V, f=1MHz	-	438	-	pF
		V <sub>R</sub> =600V, f=1MHz	-	44	-	pF
Total capacitive charge	Q <sub>C</sub>	V <sub>R</sub> =400V, di/dt=350A/μs	-	18	-	nC
Switching time	t <sub>c</sub>	V <sub>R</sub> =400V, di/dt=350A/μs	-	16	-	ns

●Electrical characteristic curves

Fig.1  $V_F - I_F$  Characteristics

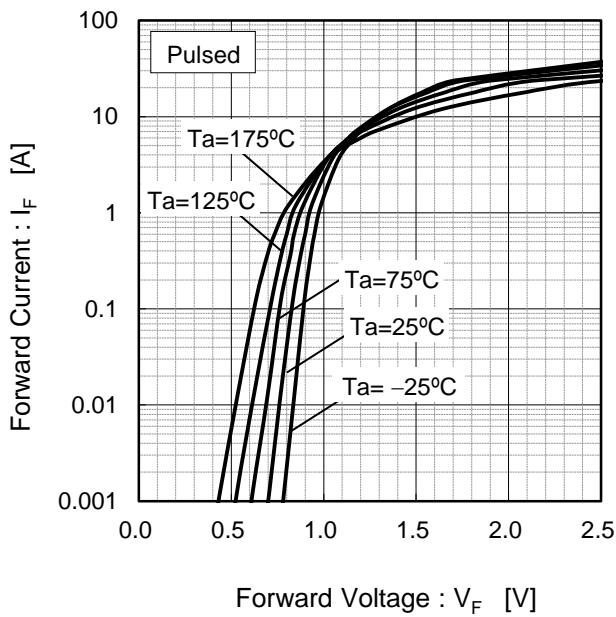


Fig.2  $V_F - I_F$  Characteristics

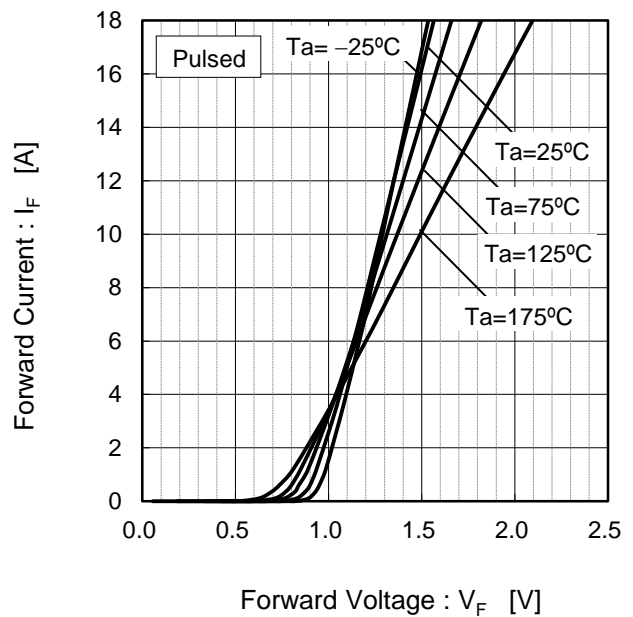


Fig.3  $V_R - I_R$  Characteristics

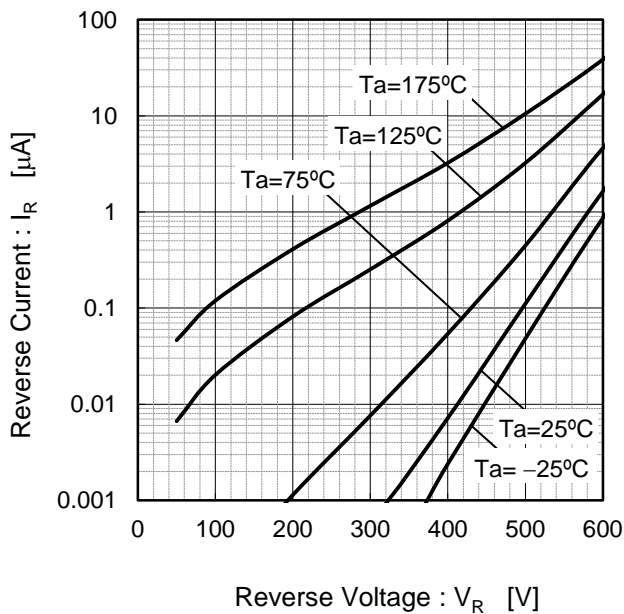
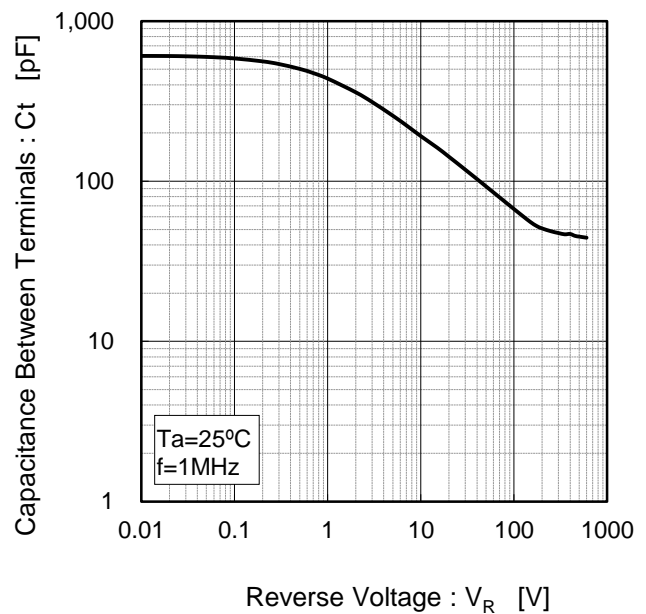


Fig.4  $V_R - C_t$  Characteristics



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