

# FDCA10S65

## SiC Schottky Barrier Diode

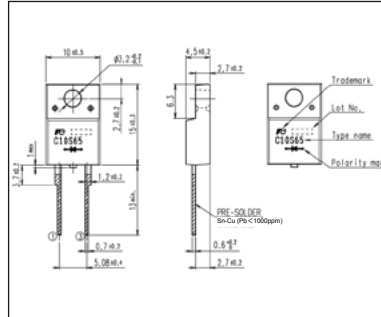
### Features

- Ultra Low IR
- Low  $V_F$
- $T_j$  MAX = 175°C
- High reliability at higher temperatures

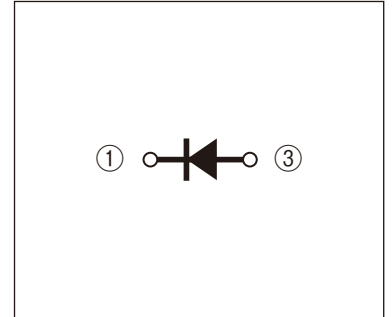
### Applications

- High frequency operation
- DC-DC converters
- AC adapter

### Outline Drawings [mm]



### Connection diagram



### Maximum Ratings and Characteristics

#### Maximum ratings (at $T_a=25^\circ\text{C}$ Unless otherwise specified)

Item	Symbols	Conditions	Ratings	Units
Repetitive peak reverse voltage	$V_{RRM}$		650	V
Continuous forward current	$I_F$	$D=1, T_c<32^\circ\text{C}$	10	A
Non-repetitive forward surge current	$I_{FSM}$	Sine wave, 10ms 1shot	50	A
Operating junction temperature	$T_j$		175	$^\circ\text{C}$
Storage temperature	$T_{stg}$		-50 to +150	$^\circ\text{C}$

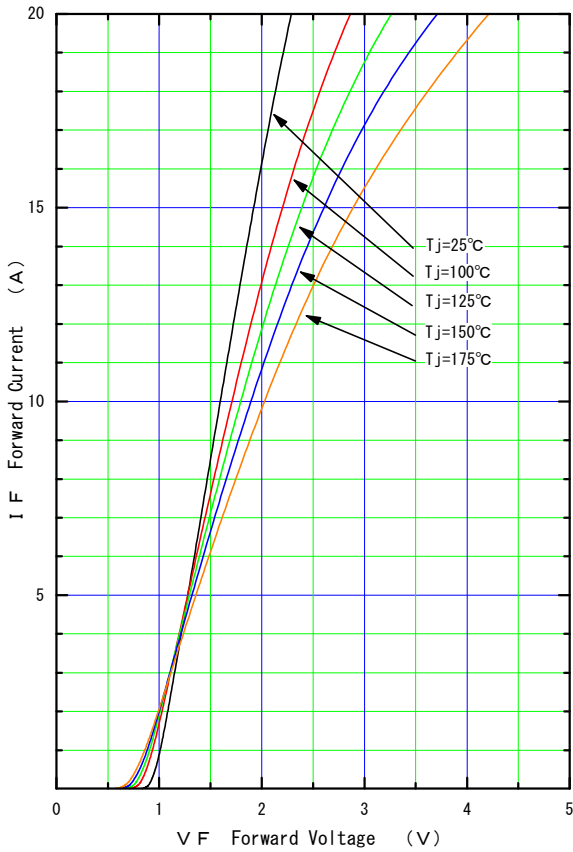
#### Electrical characteristics (at $T_a=25^\circ\text{C}$ Unless otherwise specified)

Item	Symbols	Conditions	Min.	Max.	Units
Forward voltage	$V_F$	$I_F = 10\text{ A}$	1.10	1.80	V
Reverse current	$I_R$	$V_R = V_{RRM}$	-	10	$\mu\text{A}$
Total Capacitive Charge	$Q_C$	$V_R = 170\text{V}, I_F = 15\text{ A},$ $di/dt = 100\text{A}/\mu\text{s}, T_j = 25^\circ\text{C}$	25	35	nC
Switching time	$T_C$		40	50	ns
Total Capacitance	C	$V_R = 0\text{V}, T_j = 25^\circ\text{C}, f = 1\text{MHz}$	470	560	pF
		$V_R = 200\text{V}, T_j = 25^\circ\text{C}, f = 1\text{MHz}$	50	65	
		$V_R = 650\text{V}, T_j = 25^\circ\text{C}, f = 1\text{MHz}$	35	45	
Thermal resistance	$R_{th(j-c)}$	Junction to case	-	6.5	$^\circ\text{C}/\text{W}$

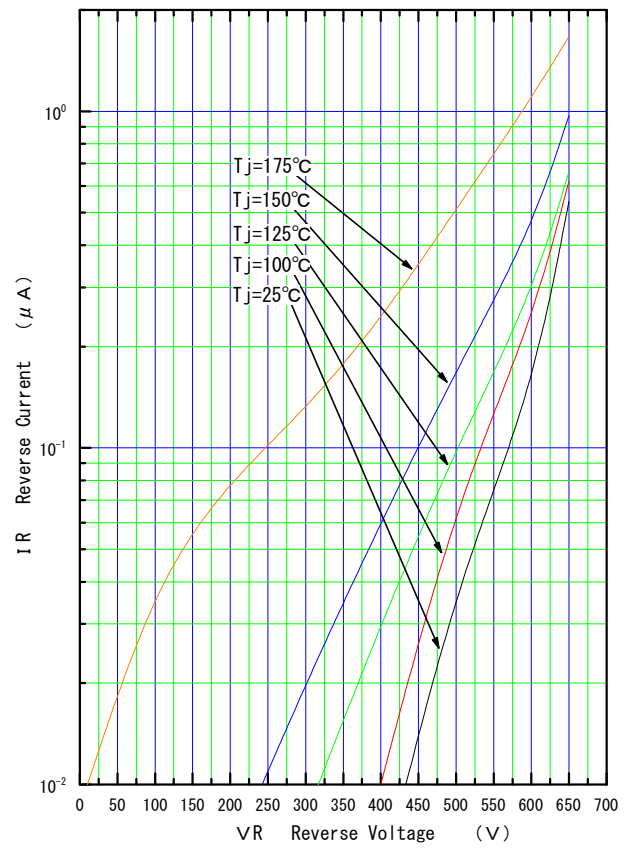
#### Mechanical characteristics

Item	Conditions	Ratings	Units
Mounting torque	Recommended torque	0.3 to 0.5	N•m
Approximate mass		2.0	g

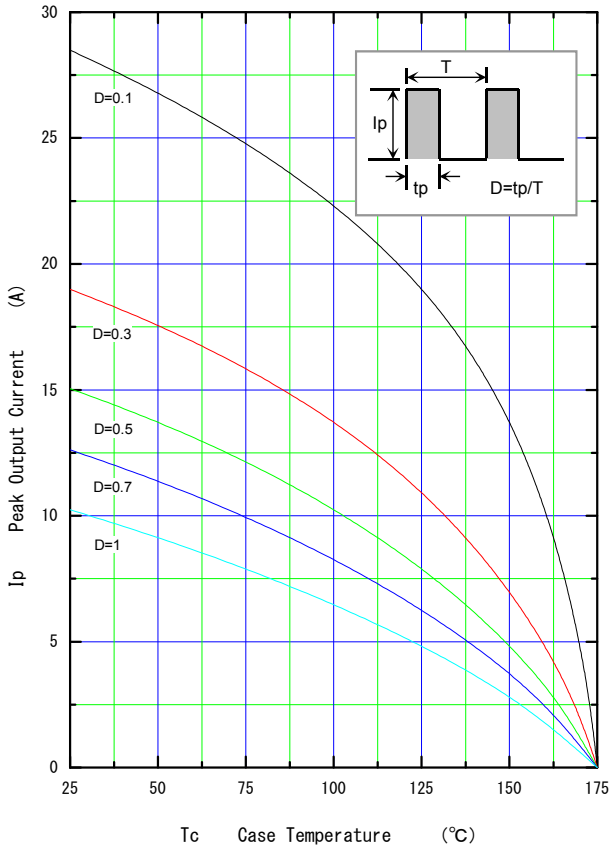
Forward Characteristic (typ.)



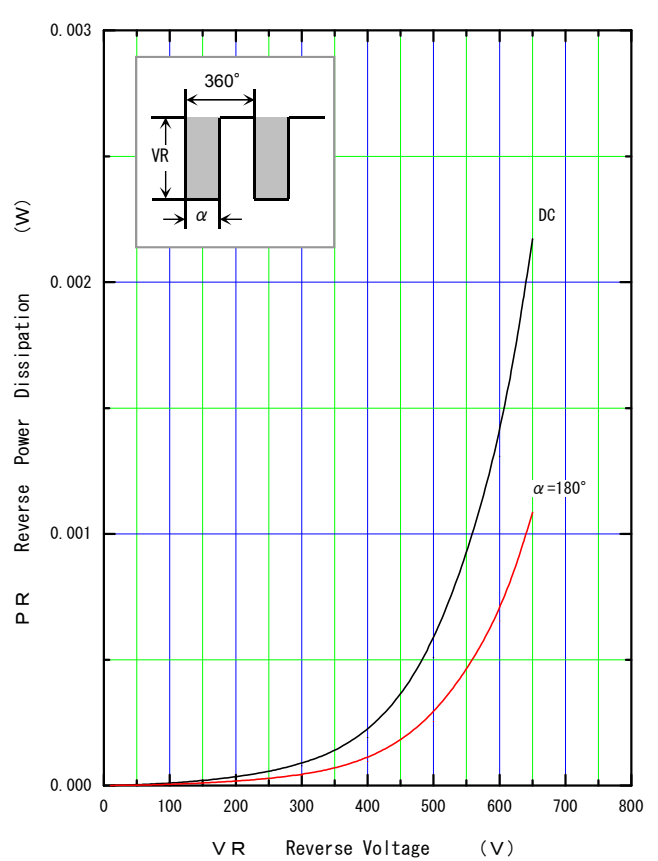
Reverse Characteristic (typ.)

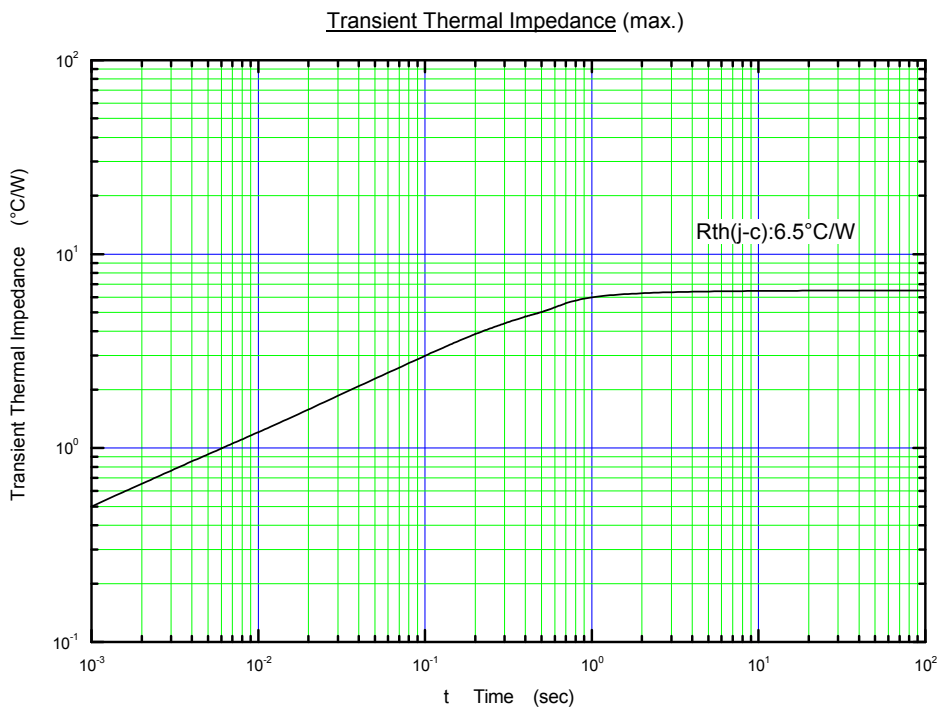
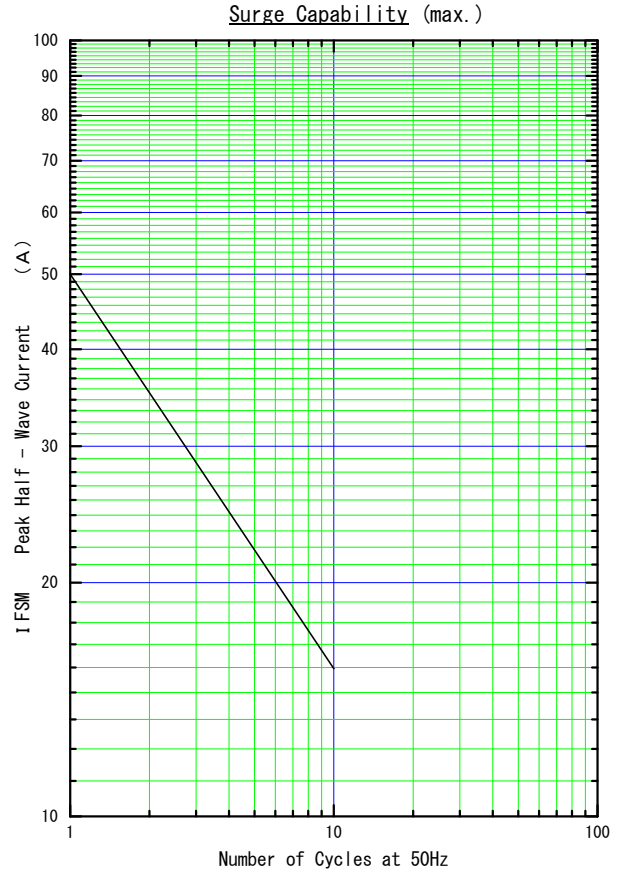
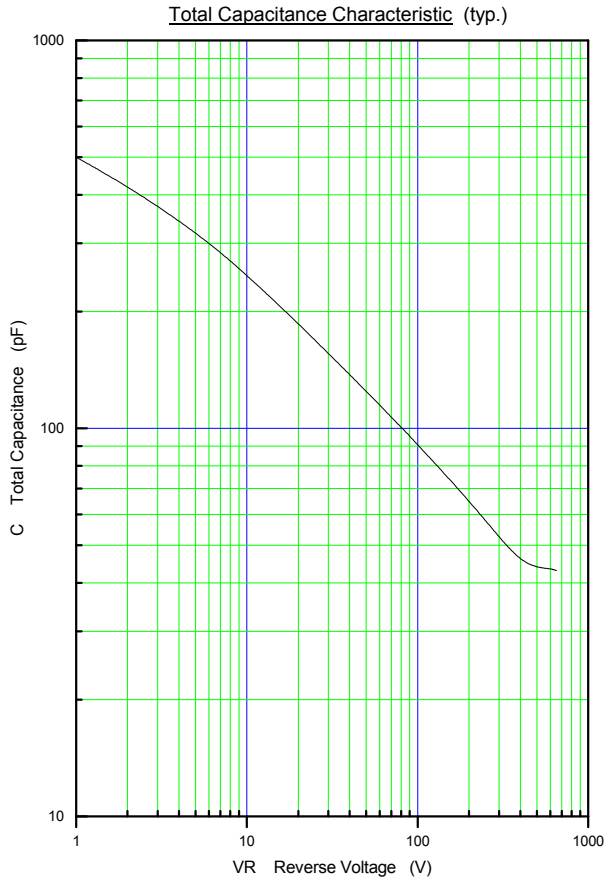


Current Derating ( $I_p$ - $T_c$ ) (max.)



Reverse Power Dissipation (max.)





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  - Measurement equipment
  - Machine tools
  - Audiovisual equipment
  - Electrical home appliances
  - Personal equipment
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  - Safety devices
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