# SCS215AJ

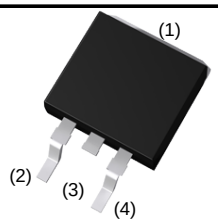
**SiC Schottky Barrier Diode**

Data Sheet

| | |
|---|---|
| $V_R$ | 650V |
| $I_F$ | 15A |
| $Q_C$ | 23nC |

## ●Outline

LPT(L)
<TO-263AB>



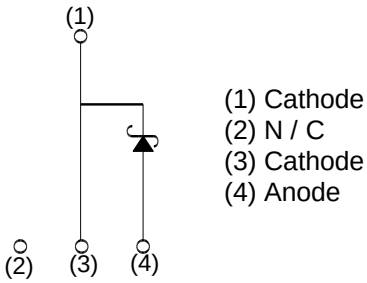

## ●Features

1) Shorter recovery time

2) Reduced temperature dependence

3) High-speed switching possible

## ●Inner circuit




## ●Packaging specifications

| | | |
|---|---|---|
| Type | Packaging | Embossed tape |
| | Reel size (mm) | 330 |
| | Tape width (mm) | 24 |
| | Basic ordering unit (pcs) | 1,000 |
| | Taping code | TLL |
| | Marking | SCS215AJ |

## ●Construction

Silicon carbide epitaxial planer Shottoky Diode

## ●Absolute maximum ratings ($T_j$ = 25°C)

| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| Reverse voltage (repetitive peak) | $V_{RM}$ | 650 | V |
| Reverse voltage (DC) | $V_R$ | 650 | V |
| Continuous forward current | $I_F$ | 15*1 | A |
| Surge no repetitive forward current | $I_{FSM}$ | 55*2 | A |
| | | 200*3 | A |
| | | 43*4 | A |
| Repetitive peak forward current | $I_{FRM}$ | 56*5 | A |
| Total power dissipation | $P_D$ | 100*6 | W |
| Junction temperature | $T_j$ | 175 | °C |
| Range of storage temperature | $T_{stg}$ | −55 to +175 | °C |

*1 $T_c$=120°C *2 PW=8.3ms sinusoidal, $T_j$=25°C

*3 PW=10μs square, $T_j$=25°C *4 PW=8.3ms sinusoidal, $T_j$=150°C

*5 $T_c$=100°C, $T_j$=150°C, Duty cycle=10% *6 $T_c$=25°C

## ●Electrical characteristics ($T_j$ = 25°C)

| Parameter | Symbol | Conditions | Values | | | Unit |
|---|---|---|---|---|---|---|
| | | | Min. | Typ. | Max. | |
| DC blocking voltage | $V_{DC}$ | $I_R$ =0.3mA | 600 | - | - | V |
| Forward voltage | $V_F$ | $I_F$=15A,$T_j$=25°C | - | 1.35 | 1.55 | V |
| | | $I_F$=15A,$T_j$=150°C | - | 1.55 | - | V |
| | | $I_F$=15A,$T_j$=175°C | - | 1.63 | - | V |
| Reverse current | $I_R$ | $V_R$=600V,$T_j$=25°C | - | 3 | 300 | μA |
| | | $V_R$=600V,$T_j$=150°C | - | 45 | - | μA |
| | | $V_R$=600V,$T_j$=175°C | - | 105 | - | μA |
| Total capacitance | C | $V_R$=1V,f=1MHz | - | 550 | - | pF |
| | | $V_R$=600V,f=1MHz | - | 56 | - | pF |
| Total capacitive charge | $Q_c$ | $V_R$=400V,di/dt=350A/μs | - | 23 | - | nC |
| Switching time | $t_c$ | $V_R$=400V,di/dt=350A/μs | - | 18 | - | ns |

## ●Thermal characteristics

| Parameter | Symbol | Conditions | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|
| Thermal resistance | $R_{th(j-c)}$ | - | - | 1.2 | 1.5 | °C/W |

## ●Electrical characteristic curves

Fig.1 $V_F$ - $I_F$ Characteristics

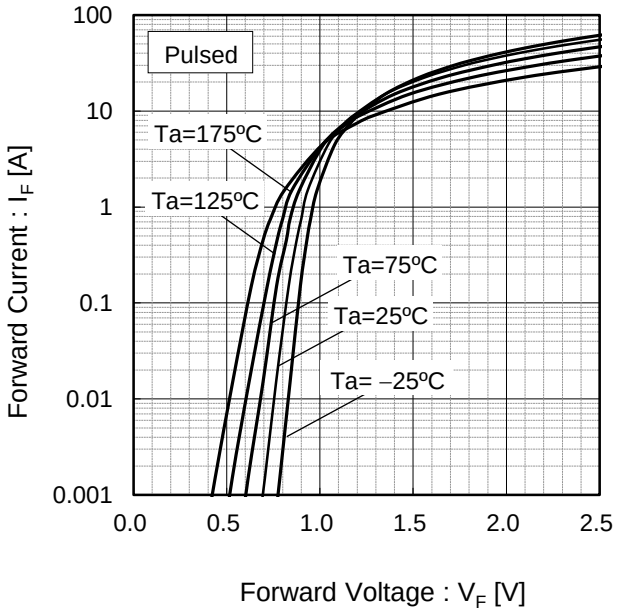



Fig.2 $V_F$ - $I_F$ Characteristics

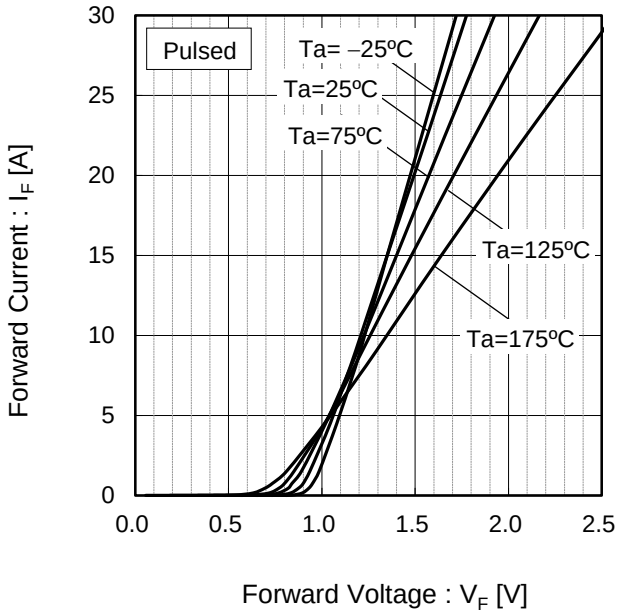



Fig.3 $V_R$ - $I_R$ Characteristics

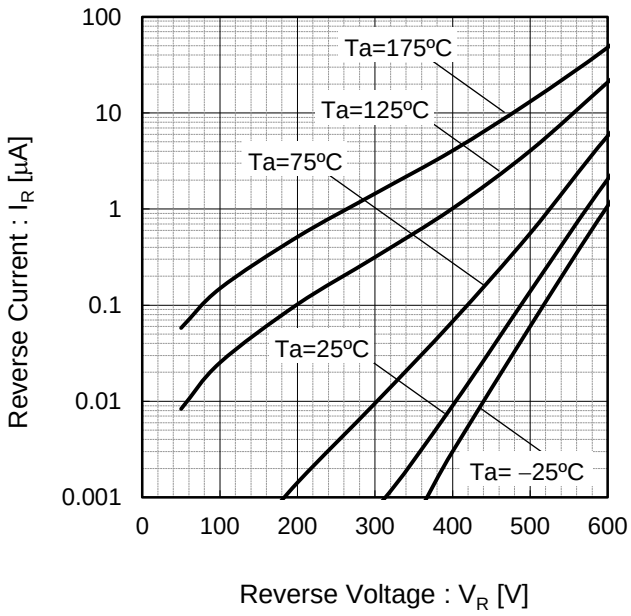
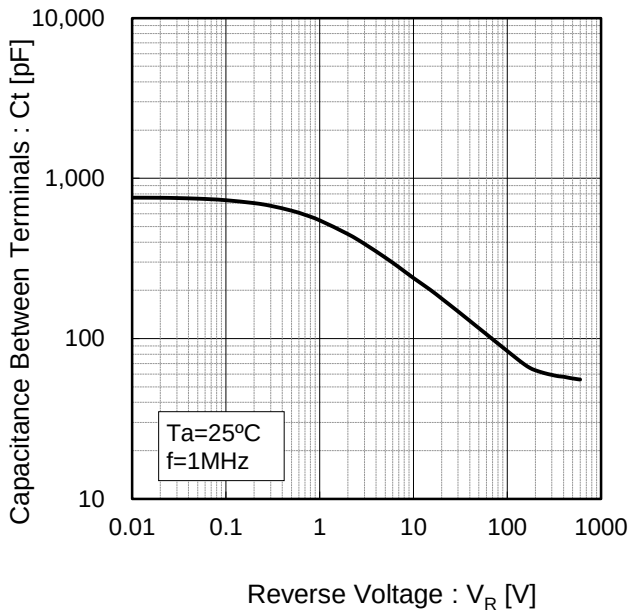



Fig.4 $V_R$-Ct Characteristics



## ●Electrical characteristic curves

Fig.5 Thermal Resistance vs. Pulse Width

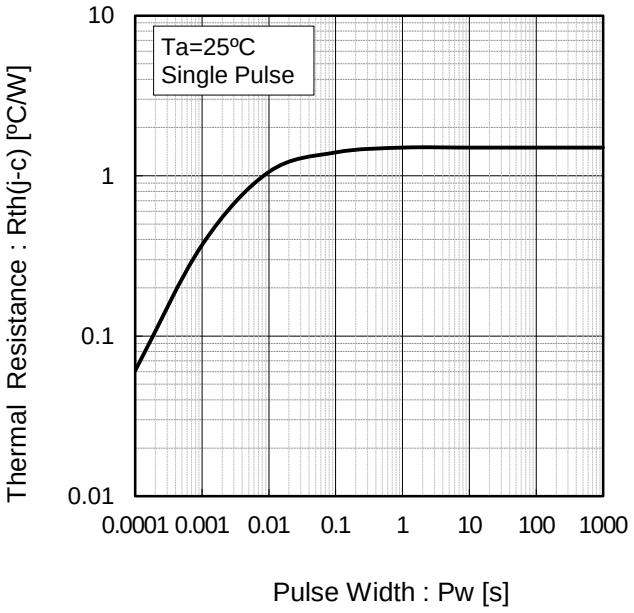



Fig.6 Power Dissipation

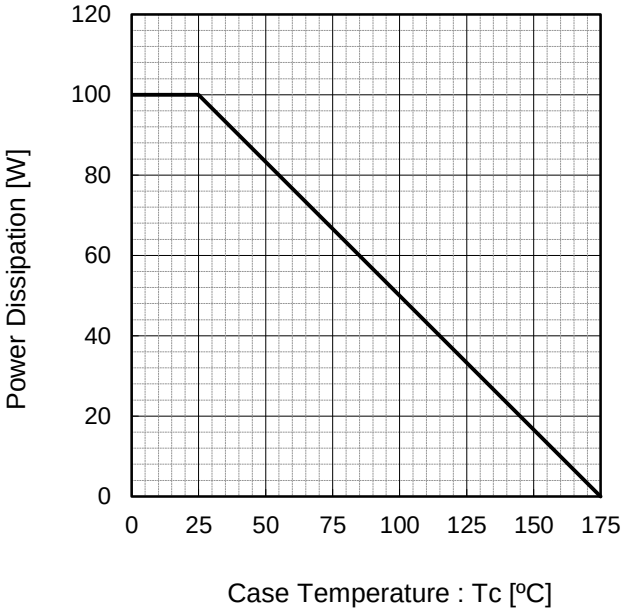



Fig.7 Ip-Tc Derating Curve

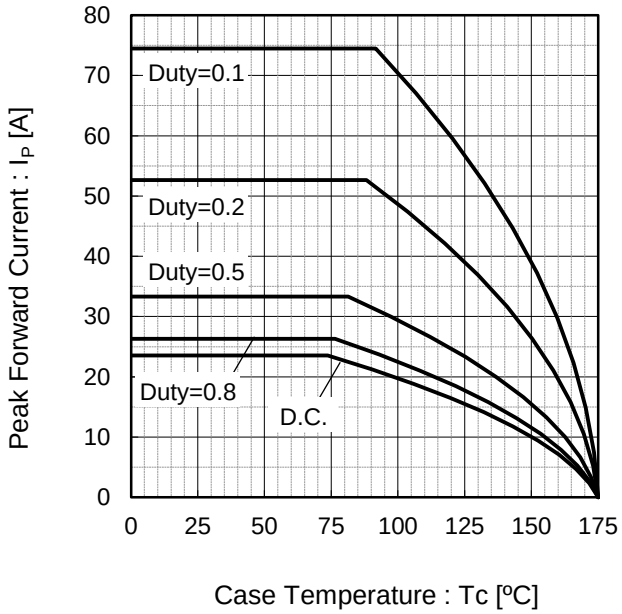
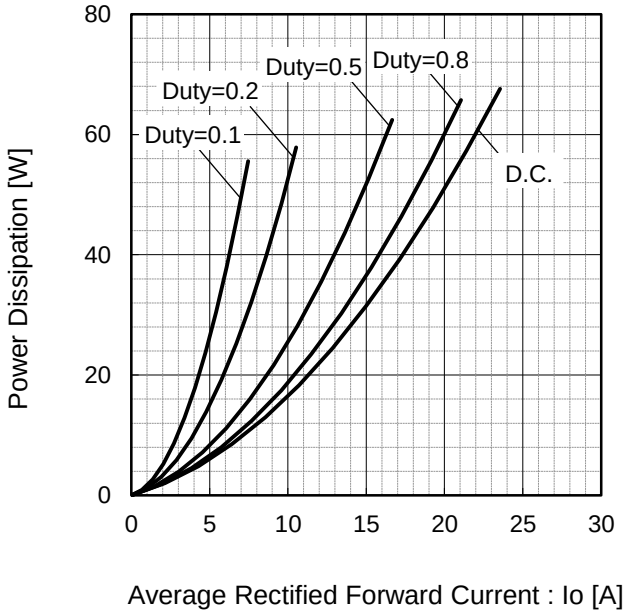
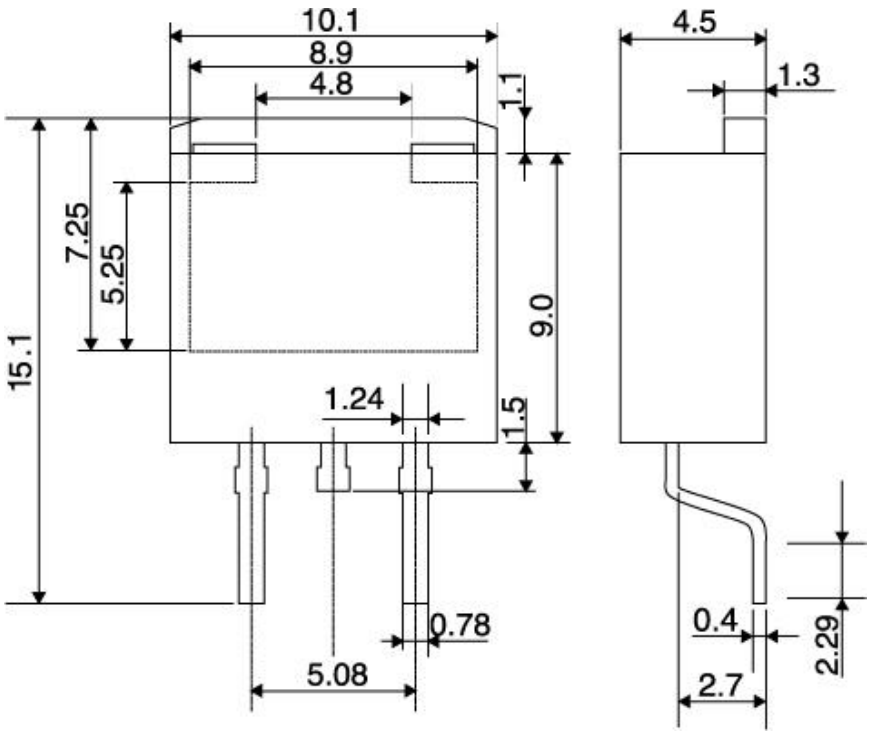



Fig.8 Io-Pf Characteristics



●**Dimensions** (Unit : mm)

**LPT(L)**



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