

| | |
|-------|-------|
| V_R | 1200V |
| I_F | 10A |
| Q_C | 34nC |

●AEC-Q101 Qualified

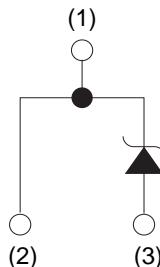
TO-220AC



●Features

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

●Inner circuit



(1) Cathode
(2) Cathode
(3) Anode

●Packaging specifications

| | | |
|------|---------------------------|----------|
| Type | Packaging | Tube |
| | Reel size (mm) | - |
| | Tape width (mm) | - |
| | Basic ordering unit (pcs) | 50 |
| | Packing code | C |
| | Marking | SCS210KG |

●Absolute maximum ratings ($T_j = 25^\circ\text{C}$)

| Parameter | Symbol | Value | Unit |
|-------------------------------------|-----------|-------------|------|
| Reverse voltage (repetitive peak) | V_{RM} | 1200 | V |
| Reverse voltage (DC) | V_R | 1200 | V |
| Continuous forward current | I_F | 10^{*1} | A |
| Surge no repetitive forward current | I_{FSM} | 45^{*2} | A |
| | | 190^{*3} | A |
| | | 33^{*4} | A |
| Repetitive peak forward current | I_{FRM} | 46^{*5} | A |
| Total power dissipation | P_D | 150^{*6} | W |
| Junction temperature | T_j | 175 | °C |
| Range of storage temperature | T_{stg} | -55 to +175 | °C |

*1 $T_c=146^\circ\text{C}$ *2 $PW=8.3\text{ms}$ sinusoidal, $T_j=25^\circ\text{C}$ *3 $PW=10\mu\text{s}$ square, $T_j=25^\circ\text{C}$

*4 $Pw=8.3\text{ms}$ sinusoidal, $T_j=150^\circ\text{C}$, *5 $T_c=100^\circ\text{C}, T_j=150^\circ\text{C}$, Duty cycle=10% *6 $T_c=25^\circ\text{C}$

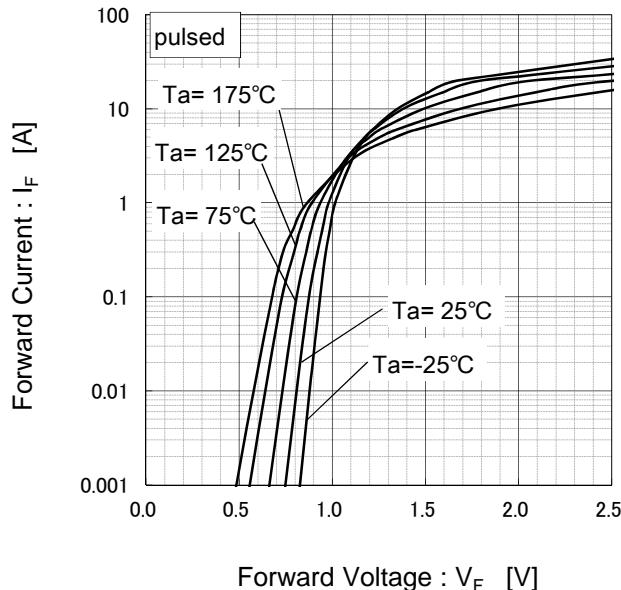
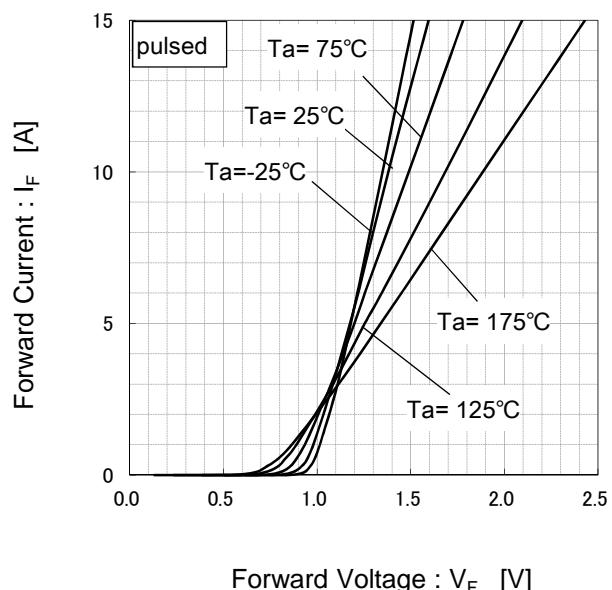
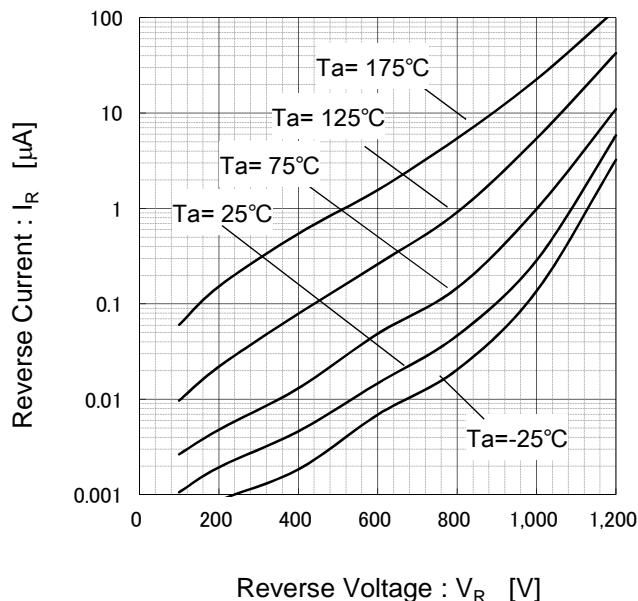
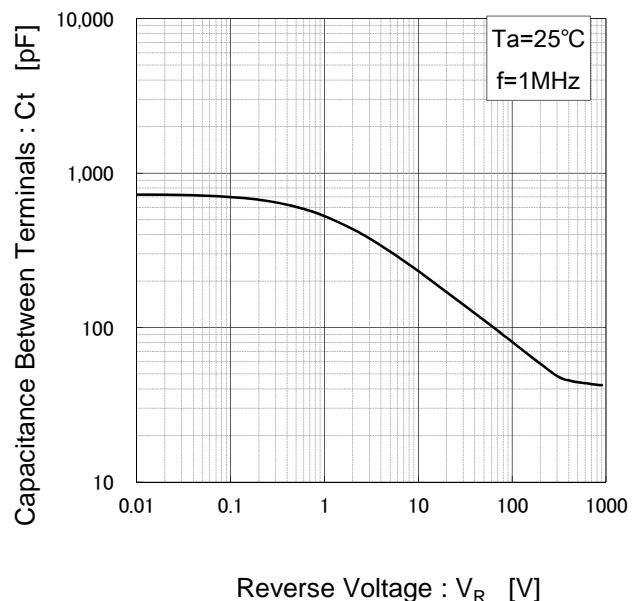
●Electrical characteristics (T_j = 25°C)

| Parameter | Symbol | Conditions | Values | | | Unit |
|-------------------------|-----------------|--|--------|------|------|------|
| | | | Min. | Typ. | Max. | |
| DC blocking voltage | V _{DC} | I _R =0.2mA | 1200 | - | - | V |
| Forward voltage | V _F | I _F =10A, T _j =25°C | - | 1.4 | 1.6 | V |
| | | I _F =10A, T _j =150°C | - | 1.8 | - | V |
| | | I _F =10A, T _j =175°C | - | 1.9 | - | V |
| Reverse current | I _R | V _R =1200V, T _j =25°C | - | 10 | 200 | μA |
| | | V _R =1200V, T _j =150°C | - | 80 | - | μA |
| | | V _R =1200V, T _j =175°C | - | 130 | - | μA |
| Total capacitance | C | V _R =1V, f=1MHz | - | 550 | - | pF |
| | | V _R =800V, f=1MHz | - | 42 | - | pF |
| Total capacitive charge | Q _c | V _R =800V, di/dt=500A/μs | - | 34 | - | nC |
| Switching time | t _c | V _R =800V, di/dt=500A/μs | - | 15 | - | ns |

●Thermal characteristics

| Parameter | Symbol | Conditions | Min. | Typ. | Max. | Unit |
|--------------------|----------------------|------------|------|------|------|------|
| Thermal resistance | R _{th(j-c)} | - | - | 0.73 | 0.99 | °C/W |

● Electrical characteristic curves

Fig.1 V_F - I_F CharacteristicsFig.2 V_F - I_F CharacteristicsFig.3 V_R - I_R CharacteristicsFig.4 V_R - C_t Characteristics

●Electrical characteristic curves

Fig.5 Thermal Resistance vs. Pulse Width

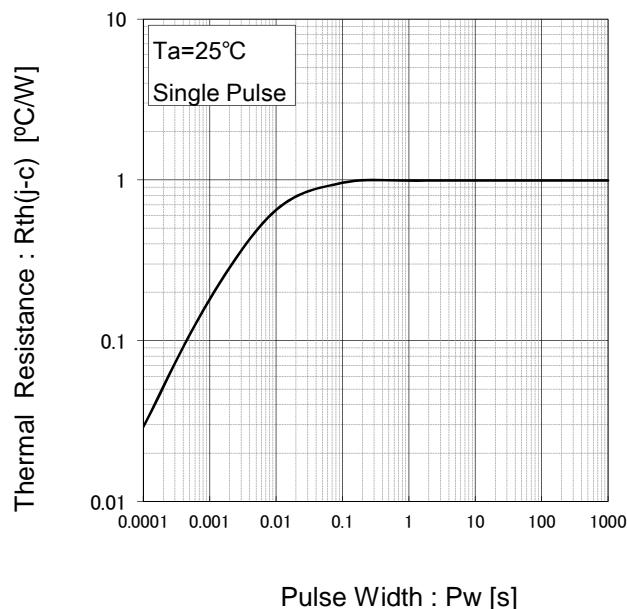


Fig.6 Power Dissipation

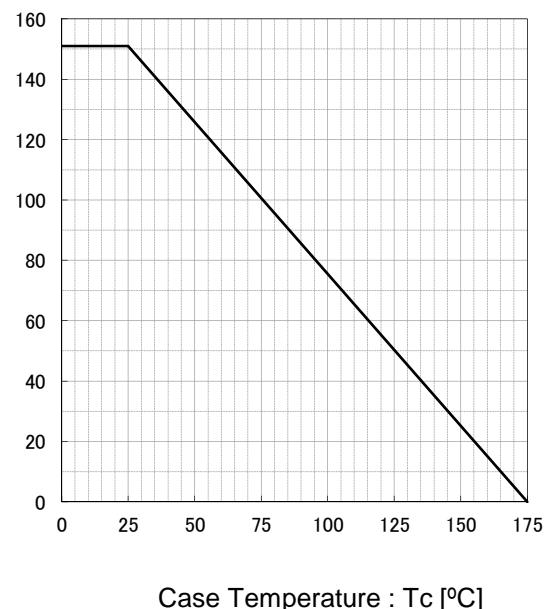


Fig.7 Derating Curve I_p - T_c

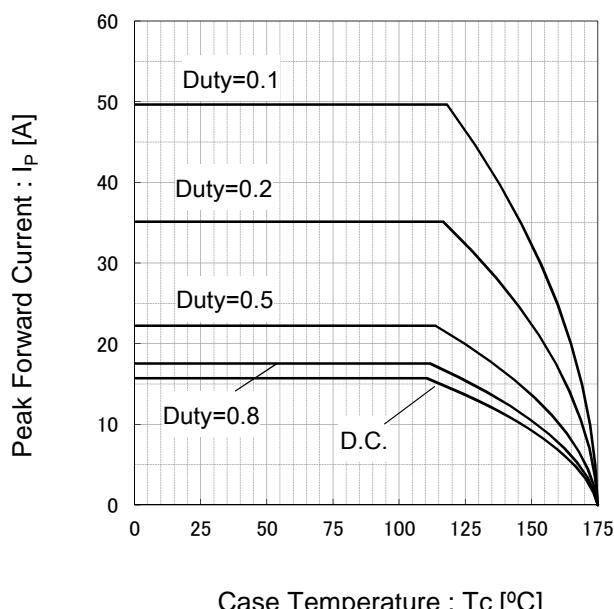
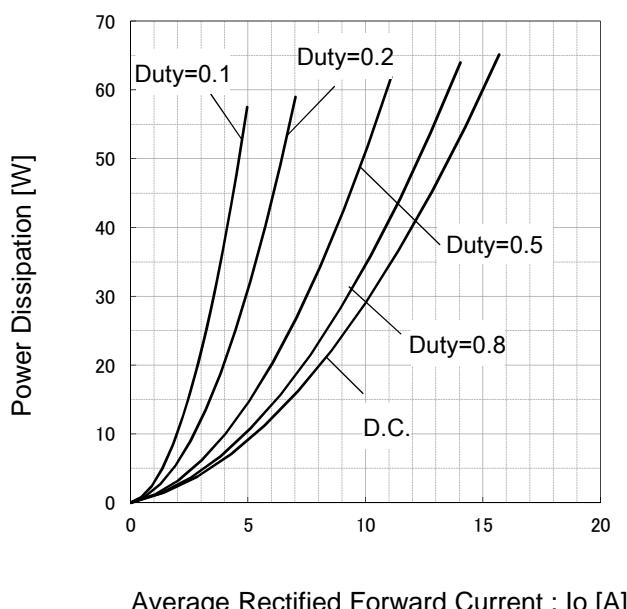
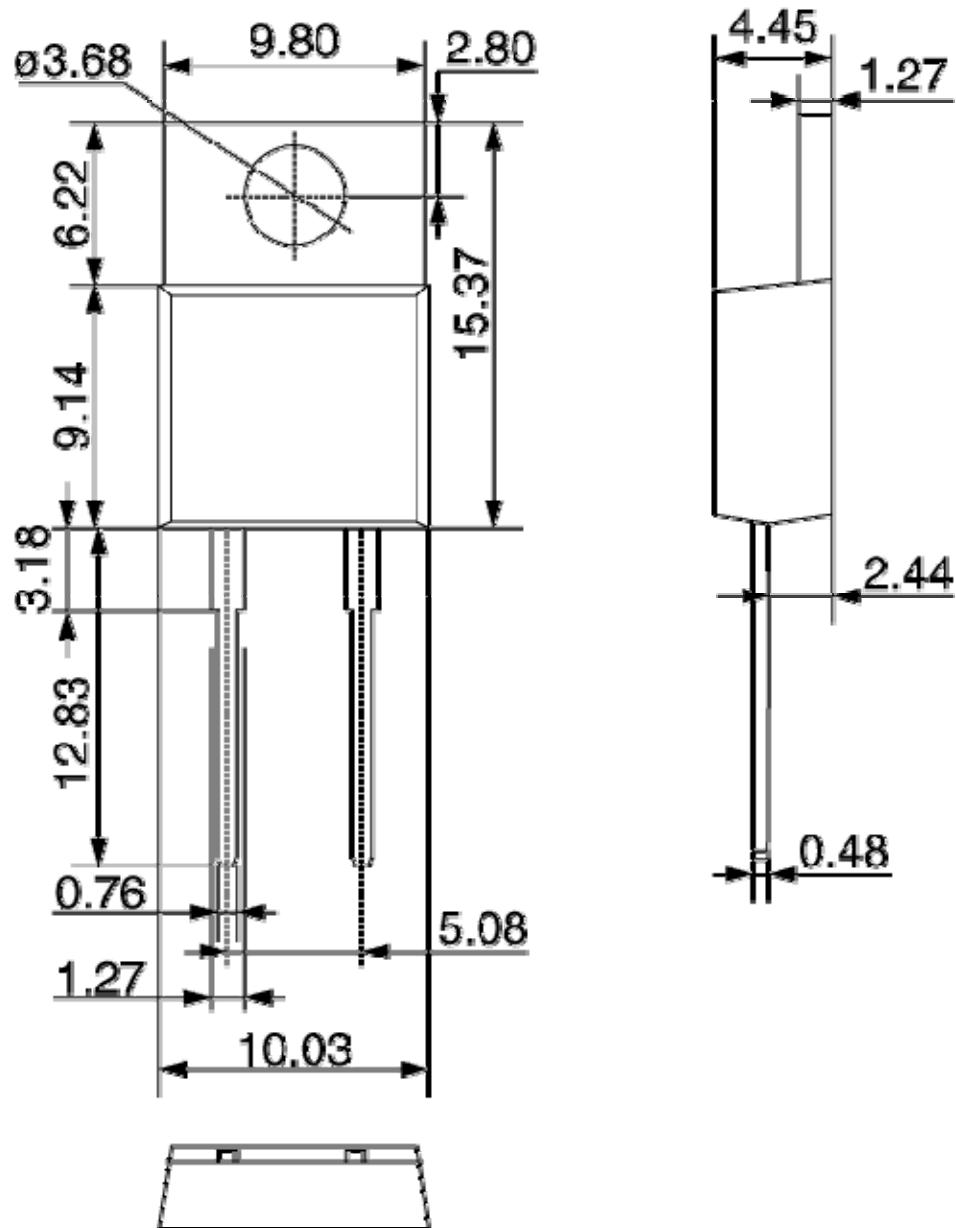


Fig.8 I_o - P_f Characteristics



●Dimensions (Unit : mm)

TO-220AC



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| | |
|-----------------------------|------------|
| Part Number | SCS210KGHR |
| Package | TO-220AC |
| Unit Quantity | 1000 |
| Minimum Package Quantity | 50 |
| Packing Type | Tube |
| Constitution Materials List | inquiry |
| RoHS | Yes |

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