

CR6CM-12B

600V - 6A - Thyristor

Medium Power Use

R07DS0230EJ0300

Rev.3.00

Jul 30, 2013

Features

- $I_{T(AV)}$: 6 A
- V_{DRM} : 600 V
- I_{GT} : 10 mA
- Non-Insulated Type
- Planar Passivation Type

Outline

RENESAS Package code: PRSS0004AG-A
(Package name: TO-220AB)

RENESAS Package code: PRSS0004AA-A
(Package name: TO-220)



Applications

Switching mode power supply, regulator for autcycle, motor control, heater control, and other general purpose control applications

Maximum Ratings

Parameter	Symbol	Voltage class	Unit
		12	
Repetitive peak reverse voltage	V_{RRM}	600	V
Non-repetitive peak reverse voltage	V_{RSM}	720	V
DC reverse voltage	$V_{R(DC)}$	480	V
Repetitive peak off-state voltage	V_{DRM}	600	V
DC off-state voltage	$V_{D(DC)}$	480	V

Parameter	Symbol	Ratings	Unit	Conditions
RMS on-state current	$I_T (RMS)$	9.4	A	
Average on-state current	$I_T (AV)$	6	A	Commercial frequency, sine half wave 180° conduction, $T_c = 121^\circ\text{C}$ ^{Note1}
Surge on-state current	I_{TSM}	90	A	50Hz sine half wave 1 full cycle, peak value, non-repetitive
I^2t for fusing	I^2t	41	A^2s	Value corresponding to 1 cycle of half wave 50Hz, surge on-state current
Peak gate power dissipation	P_{GM}	5	W	
Average gate power dissipation	$P_G (AV)$	0.5	W	
Peak gate forward voltage	V_{FGM}	6	V	
Peak gate reverse voltage	V_{RGM}	10	V	
Peak gate forward current	I_{FGM}	2	A	
Junction temperature	T_j	- 40 to +150	$^\circ\text{C}$	
Storage temperature	T_{stg}	- 40 to +150	$^\circ\text{C}$	
Mass	—	2.1	g	Typical value

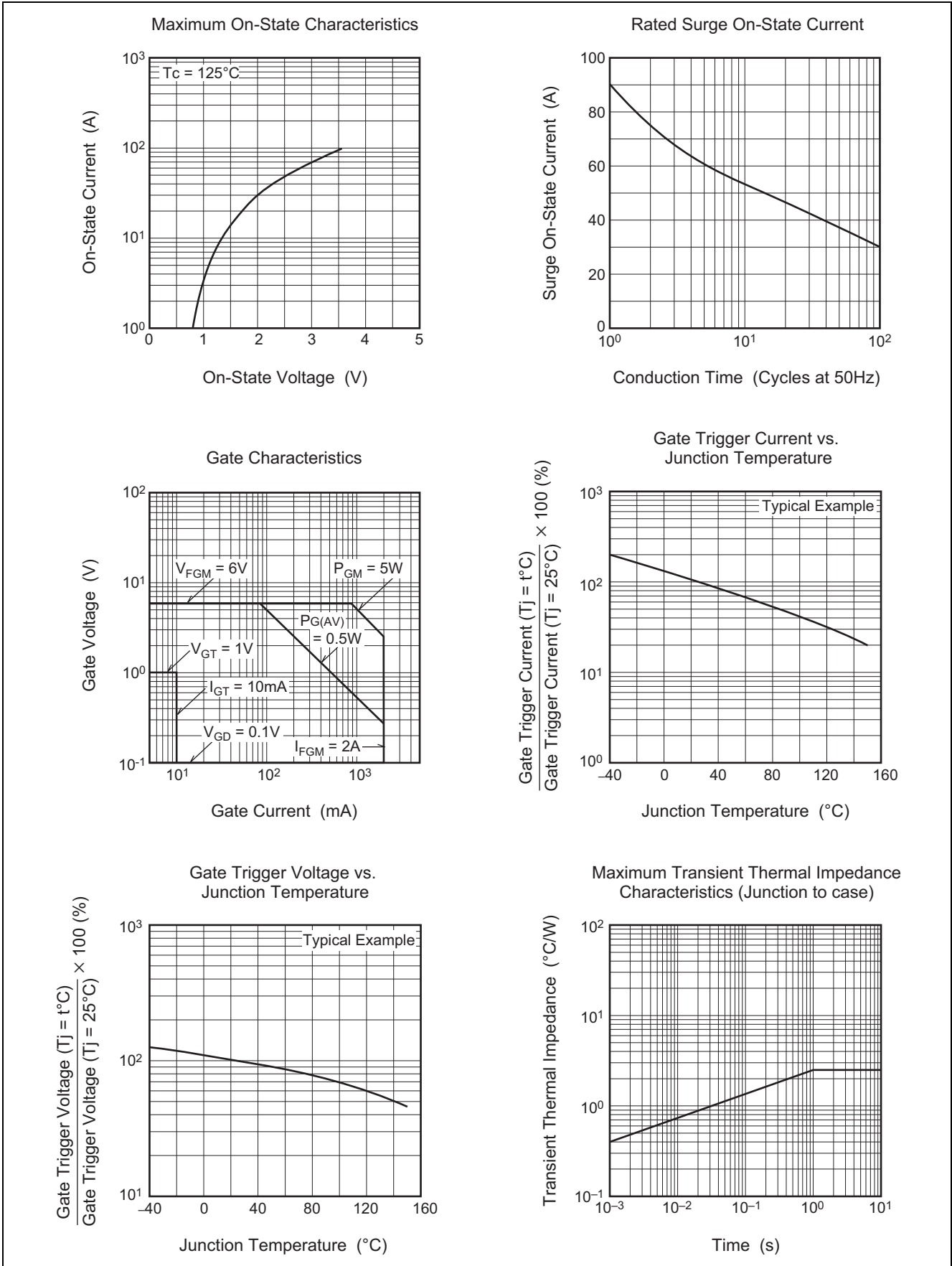
Electrical Characteristics

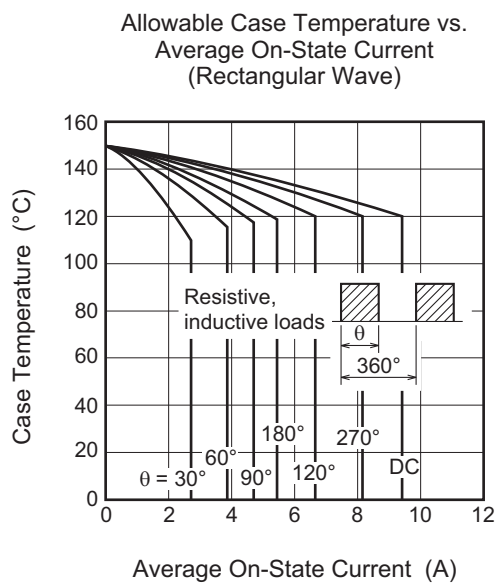
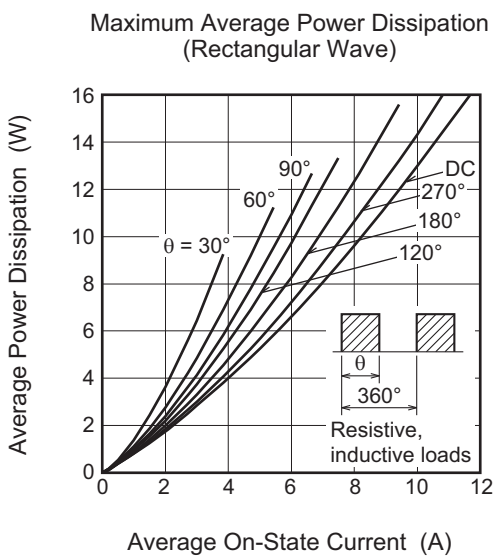
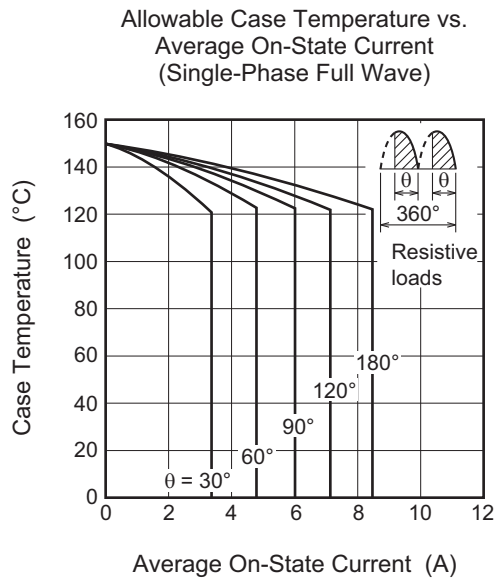
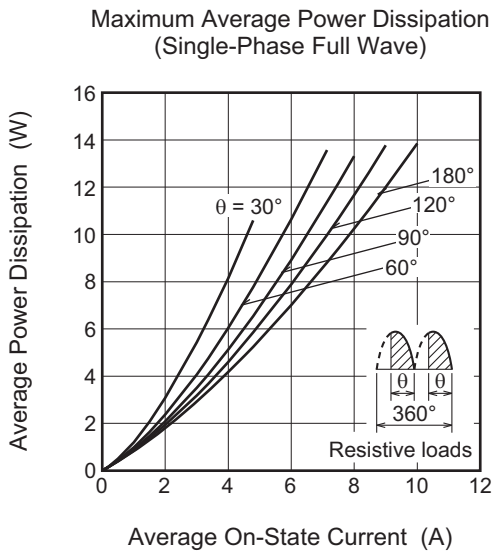
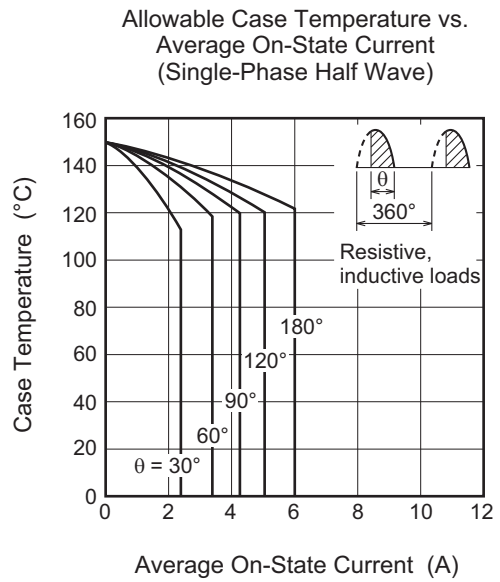
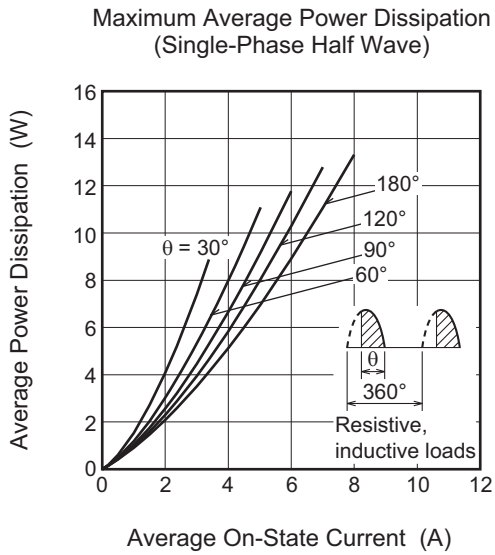
Parameter	Symbol	Min.	Typ.	Max.	Unit	Test conditions
Repetitive peak reverse current	I_{RRM}	—	—	2.0/5.0	mA	$T_j = 125^\circ\text{C}/150^\circ\text{C}$, V_{RRM} applied
Repetitive peak off-state current	I_{DRM}	—	—	2.0/5.0	mA	$T_j = 125^\circ\text{C}/150^\circ\text{C}$, V_{DRM} applied
On-state voltage	V_{TM}	—	—	1.7	V	$T_c = 25^\circ\text{C}$, $I_{TM} = 20\text{ A}$, instantaneous value
Gate trigger voltage	V_{GT}	—	—	1.0	V	$T_j = 25^\circ\text{C}$, $V_D = 6\text{ V}$, $I_T = 1\text{ A}$
Gate non-trigger voltage	V_{GD}	0.2/0.1	—	—	V	$T_j = 125^\circ\text{C}/150^\circ\text{C}$, $V_D = 1/2 V_{DRM}$
Gate trigger current	I_{GT}	—	—	10	mA	$T_j = 25^\circ\text{C}$, $V_D = 6\text{ V}$, $I_T = 1\text{ A}$
Holding current	I_H	—	15	—	mA	$T_j = 25^\circ\text{C}$, $V_D = 12\text{ V}$
Thermal resistance	$R_{th(j-c)}$	—	—	2.5	$^\circ\text{C}/\text{W}$	Junction to case ^{Note1 Note2}

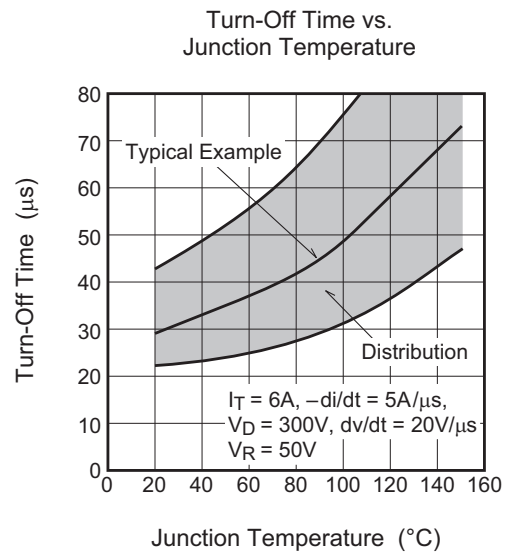
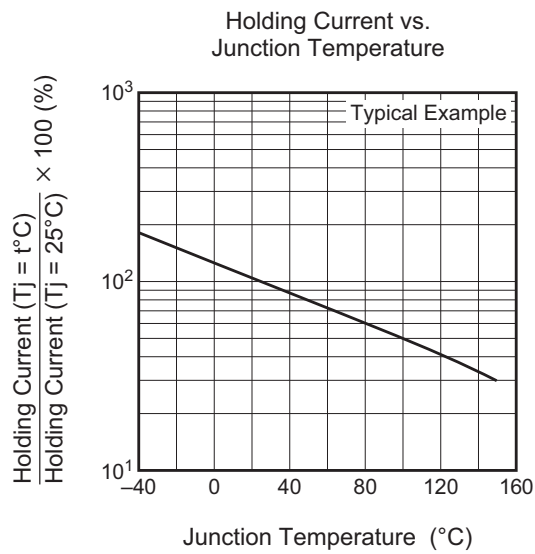
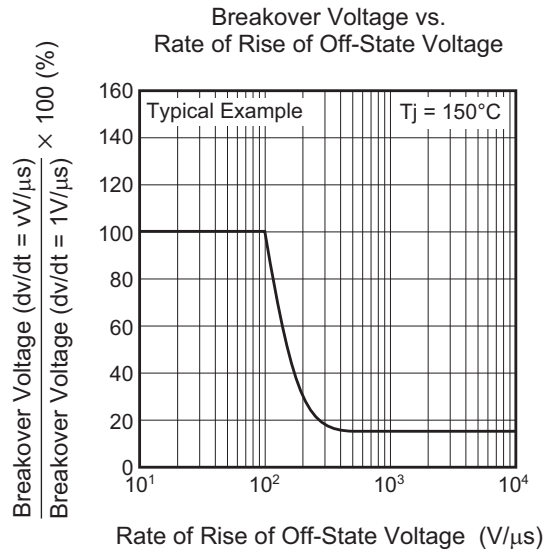
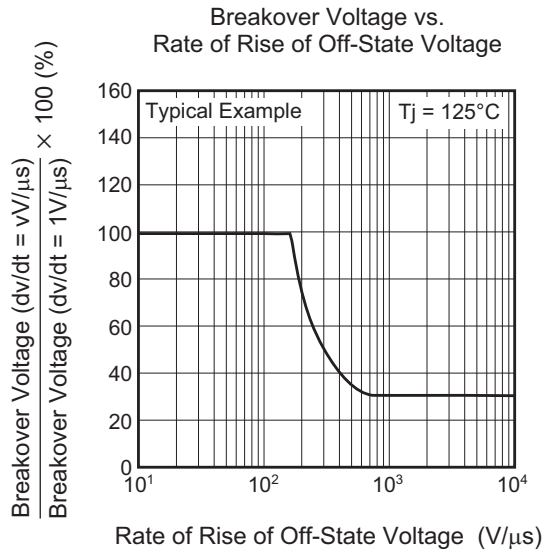
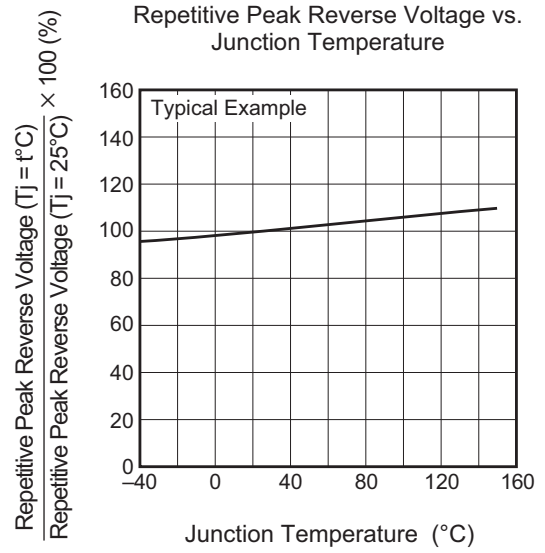
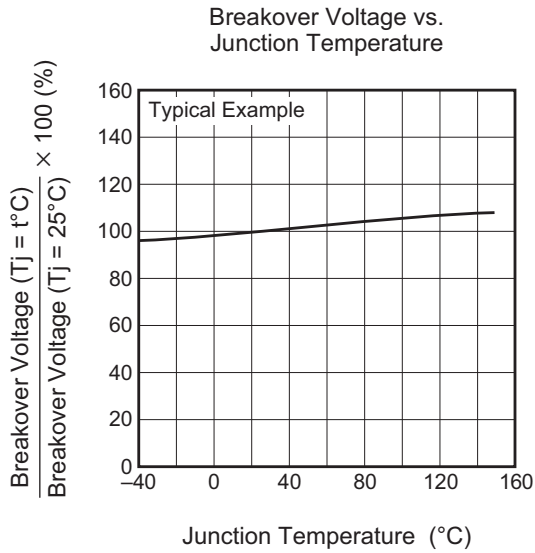
Notes: 1. Case temperature is measured at anode tab 1.5 mm away from the molded case.

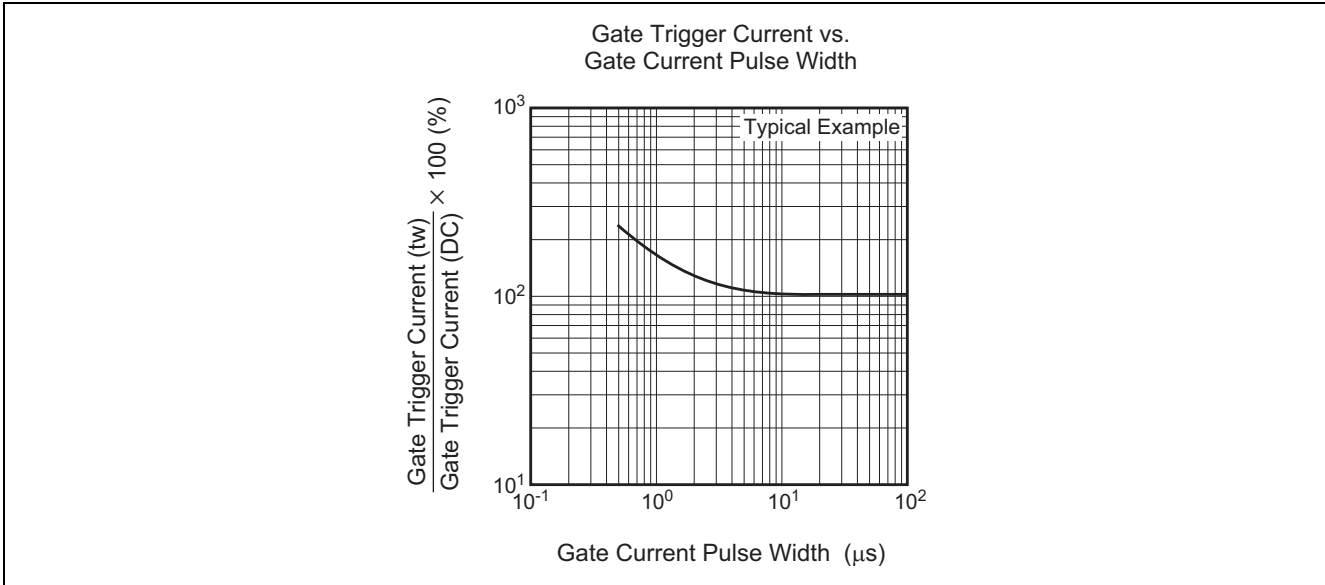
2. The contact thermal resistance $R_{th(c-f)}$ in case of greasing is $1.0^\circ\text{C}/\text{W}$.

Performance Curves

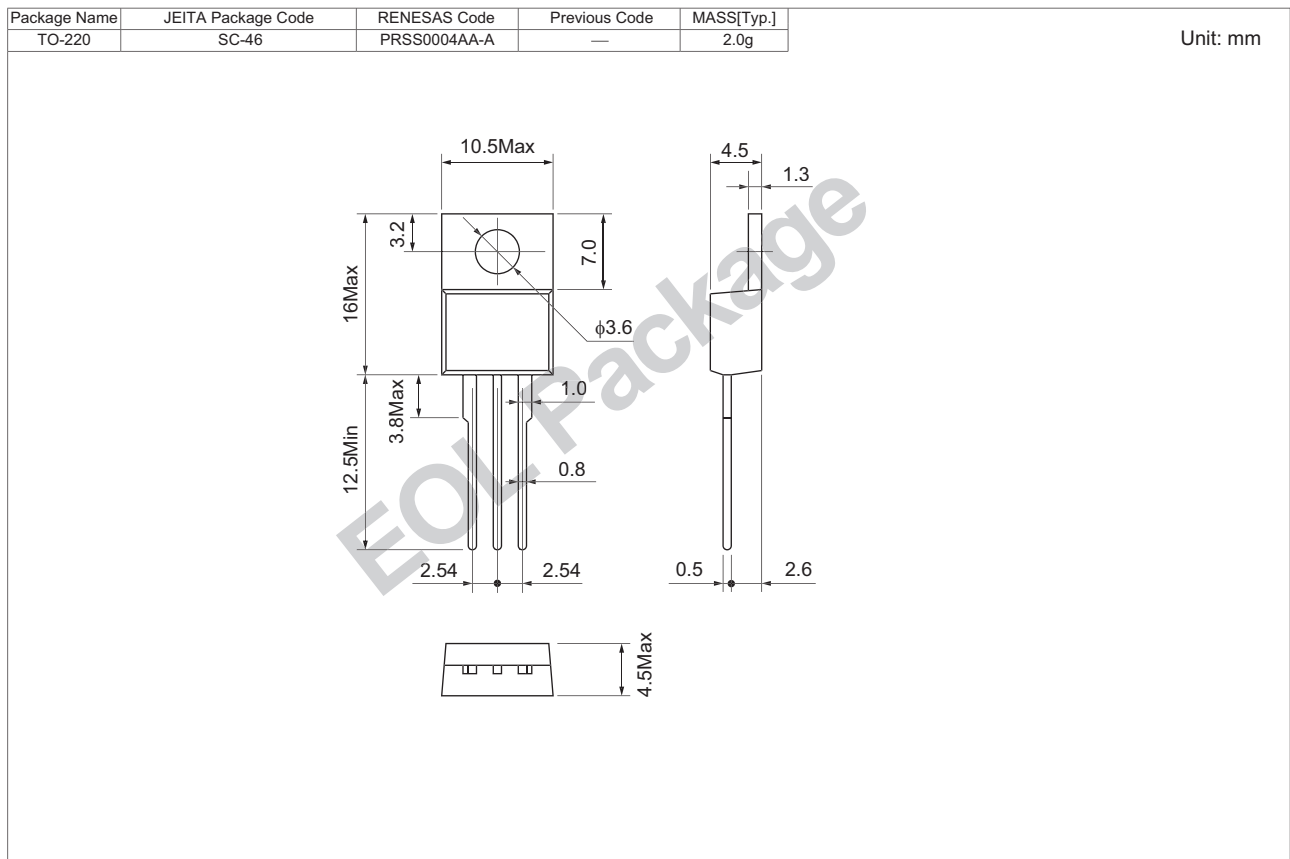
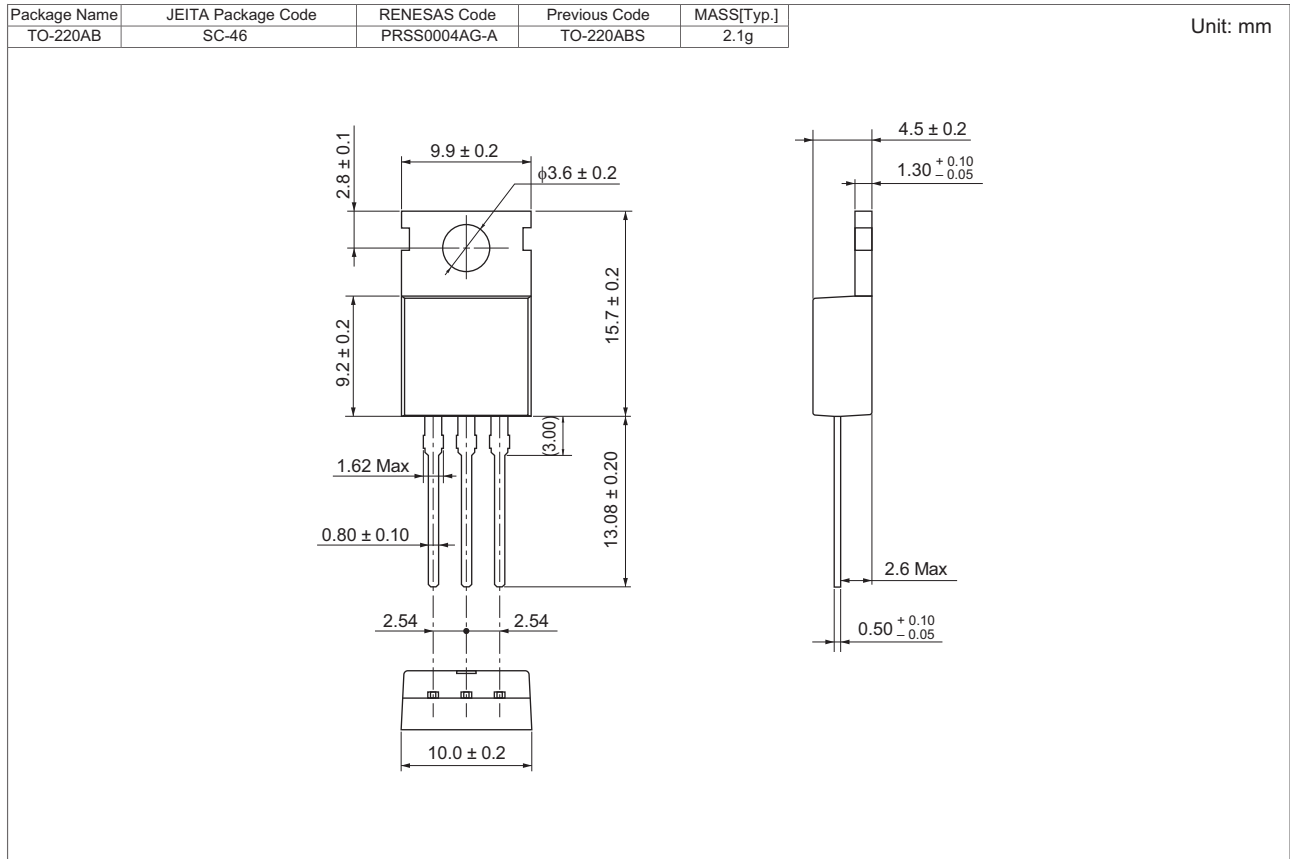








Package Dimensions



Ordering Information

Orderable Part Number	Packing	Quantity	Remark
CR6CM-12B#BB0	Tube	50 pcs.	Straight type
CR6CM-12B-A8#BB0	Tube	50 pcs.	A8 Lead form

Note: Please confirm the specification about the shipping in detail.

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