

RJU60C6TDPP-AJ

600V - 50A - Single Diode
Fast Recovery Diode

R07DS1490EJ0100

Rev.1.00

Sep.07.2020

Features

- Low forward voltage: $V_F = 1.4 \text{ V}$ typ. (at $I_F = 50 \text{ A}$)
- Fast reverse recovery time: $t_{rr} = 100 \text{ ns}$ typ. (at $I_F = 50 \text{ A}$, $di/dt = -100 \text{ A}/\mu\text{s}$)
- Low reverse current: $I_R = 1 \mu\text{A}$ max. (at $V_R = 600 \text{ V}$)
- Applications: PFC, Inverter, Converter
- Quality grade: Standard

Key Performance

Type	V_{RM}	I_F	V_F $T_C=25^\circ\text{C}$	T_j
RJU60C6TDPP-AJ	600 V	50 A	1.4 V	150 °C

Outline

RENESAS Package code: PRSS0002AP-A
(Package name: TO-220FPA-2L)



1. Cathode
2. Anode

Absolute Maximum Ratings

($T_C = 25^\circ\text{C}$)

Item	Symbol	Ratings	Unit
Maximum reverse voltage	V_{RM}	600	V
Average rectified forward current	I_o	30	A
Continuous forward current	$T_C = 25^\circ\text{C}$	I_F	50
	$T_C = 100^\circ\text{C}$	I_F	25
Peak surge forward current	I_{FSM}	140	A
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	-55 to +150	°C

Note: Continuous heavy condition (e.g. high temperature/voltage/current or high variation of temperature) may affect a reliability even if it is within the absolute maximum ratings. Please consider derating condition for appropriate reliability in reference Renesas Semiconductor Reliability Handbook (Recommendation for Handling and Usage of Semiconductor Devices) and individual reliability data.

Thermal Resistance Characteristics

(T_c = 25°C)

Item	Symbol	Max. Value ^{Notes1}	Unit
Junction to case thermal resistance	R _{th(j-c)}	2.9	°C/W

Notes: 1. Designed target value on Renesas measurement condition. (Not tested)

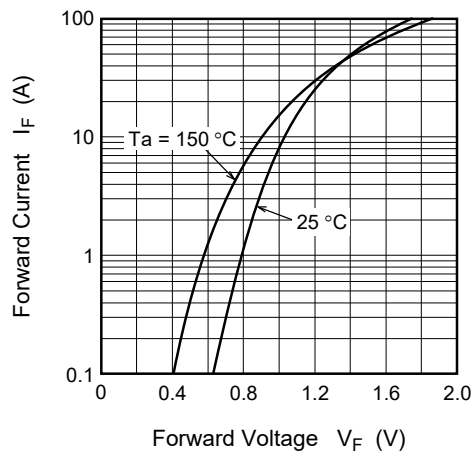
Electrical Characteristics

(T_c = 25°C)

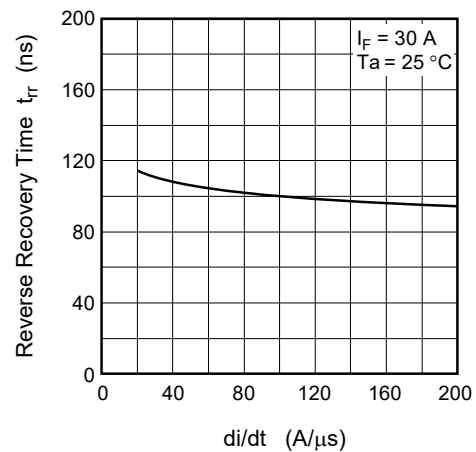
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Forward Voltage	V _F	—	1.4	2.0	V	I _F = 50 A
Reverse current	I _R	—	—	1	μA	V _R = 600 V
Reverse Recovery Time	t _{rr}	—	100	—	ns	I _F = 30 A, di/dt = -100 A/μs

Main Characteristics

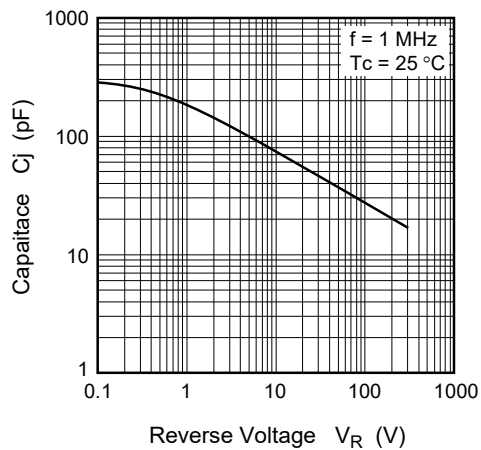
Forward Current vs. Forward Voltage (Typical)



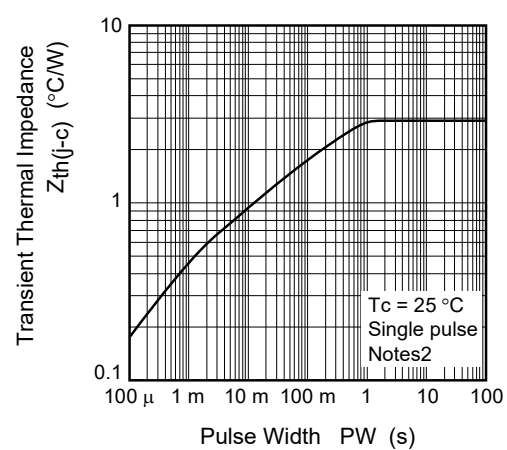
Reverse Recovery Time vs. di/dt (Typical)



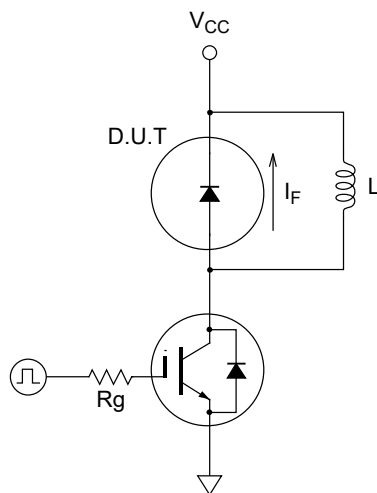
Capacitance vs. Reverse Voltage (Typical)



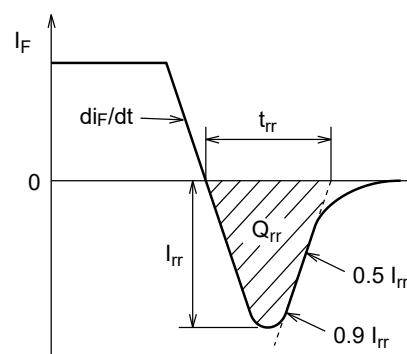
Transient Thermal Impedance vs. Pulse Width



Reverse Recovery Time Test Circuit



Waveform

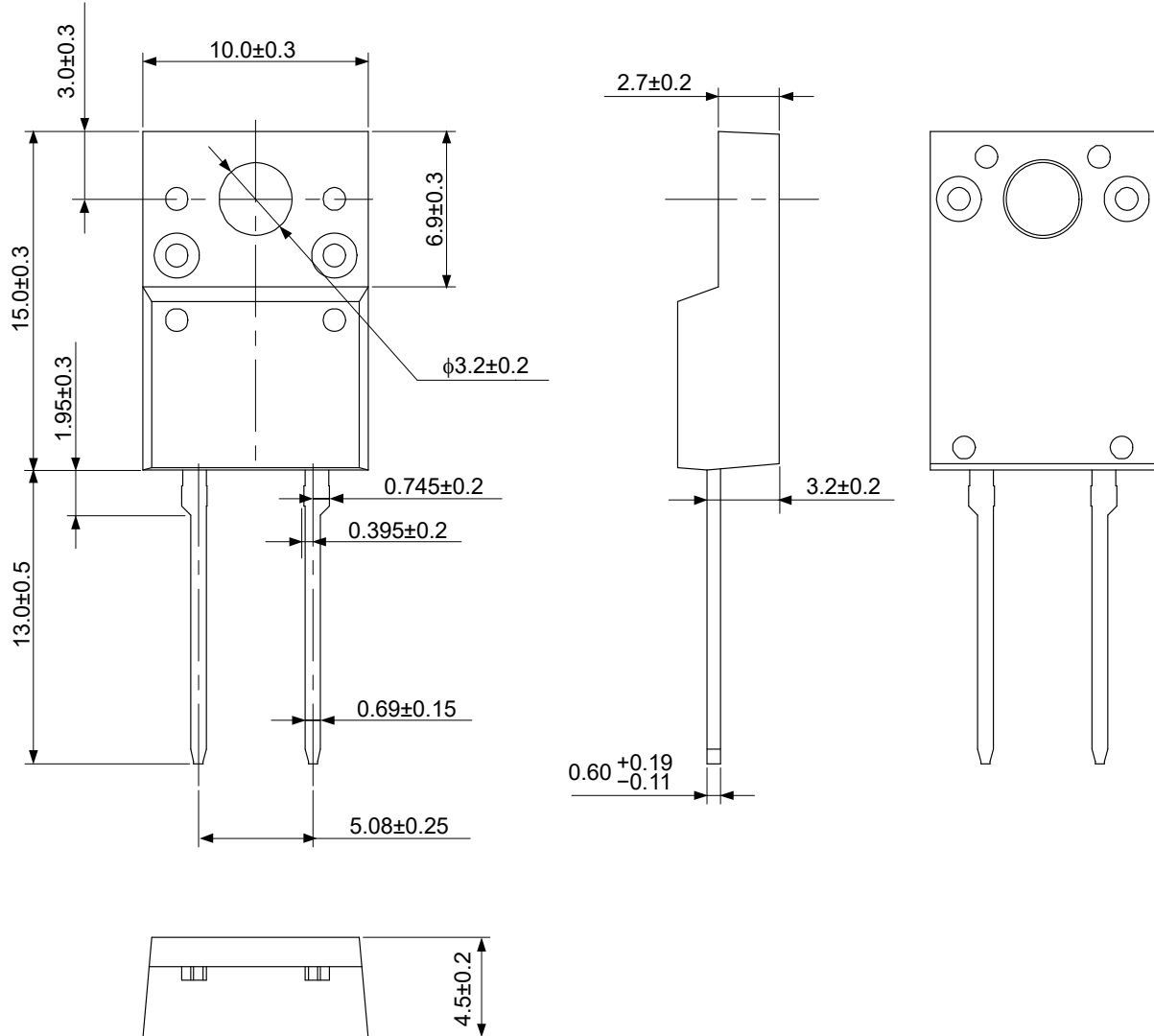


Notes: 2. Designed target value on Renesas measurement condition. (Not tested)

Package Dimensions

Package Name	JEITA Package Code	RENESAS Code	Previous Code	MASS (Typ) [g]
TO-220FPA-2L	—	PRSS0002AP-A	TO-220FPA-2L	1.58

Unit: mm



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Ordering Information

Orderable Part Number	Quantity	Shipping Container
RJU60C6TDPP-AJ#T2	600 pcs	Box (Tube)

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