

RJK1008DPP-E0

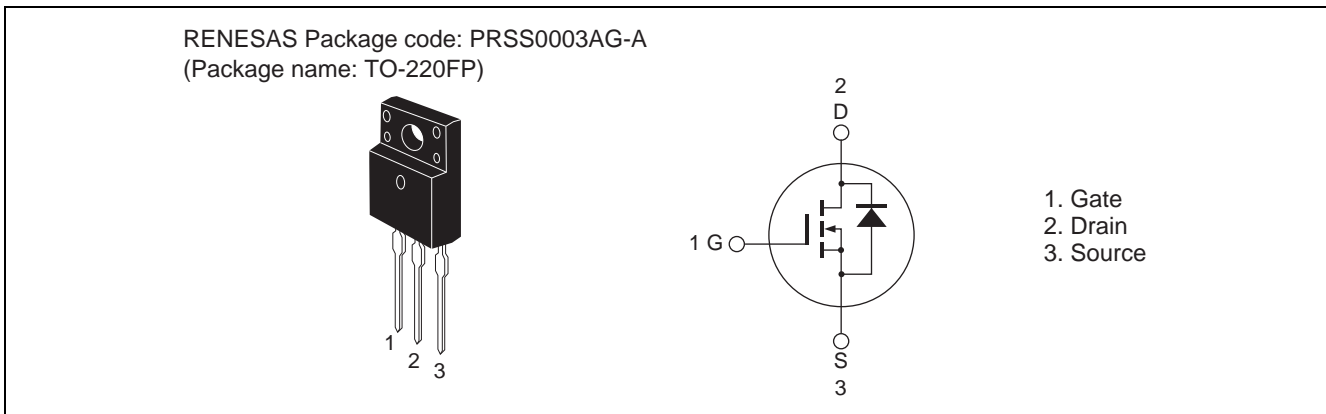
N-Channel Power MOSFET
High-Speed Switching Use

R07DS0798EJ0100
Rev.1.00
Jun 08, 2012

Features

- V_{DSS} : 100 V
- $R_{DS(on)}$: 11 m Ω (Max)
- I_D : 80 A

Outline



Application

- Motor control, Lighting control, Solenoid control, DC-DC converter, etc.

Absolute Maximum Ratings

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

Item	Symbol	Ratings	Unit
Drain to source voltage	V_{DSS}	100	V
Gate to source voltage	V_{GSS}	± 20	V
Drain current	I_D	80	A
Drain peak current	$I_{D(pulse)}$	160	A
Body-drain diode reverse drain current	I_{DR}	80	A
Body-drain diode reverse drain peak current	$I_{DR(pulse)}$	160	A
Avalanche current	I_{AP} ^{Note2}	40	A
Channel dissipation	P_{ch} ^{Note1}	45	W
Channel to case thermal impedance	θ_{ch-c}	2.78	$^\circ\text{C/W}$
Channel temperature	T_{ch}	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

Notes: 1. Value at $T_c = 25^\circ\text{C}$

2. $ST_{ch} = 25^\circ\text{C}$, $T_{ch} \leq 150^\circ\text{C}$, $L = 100 \mu\text{H}$

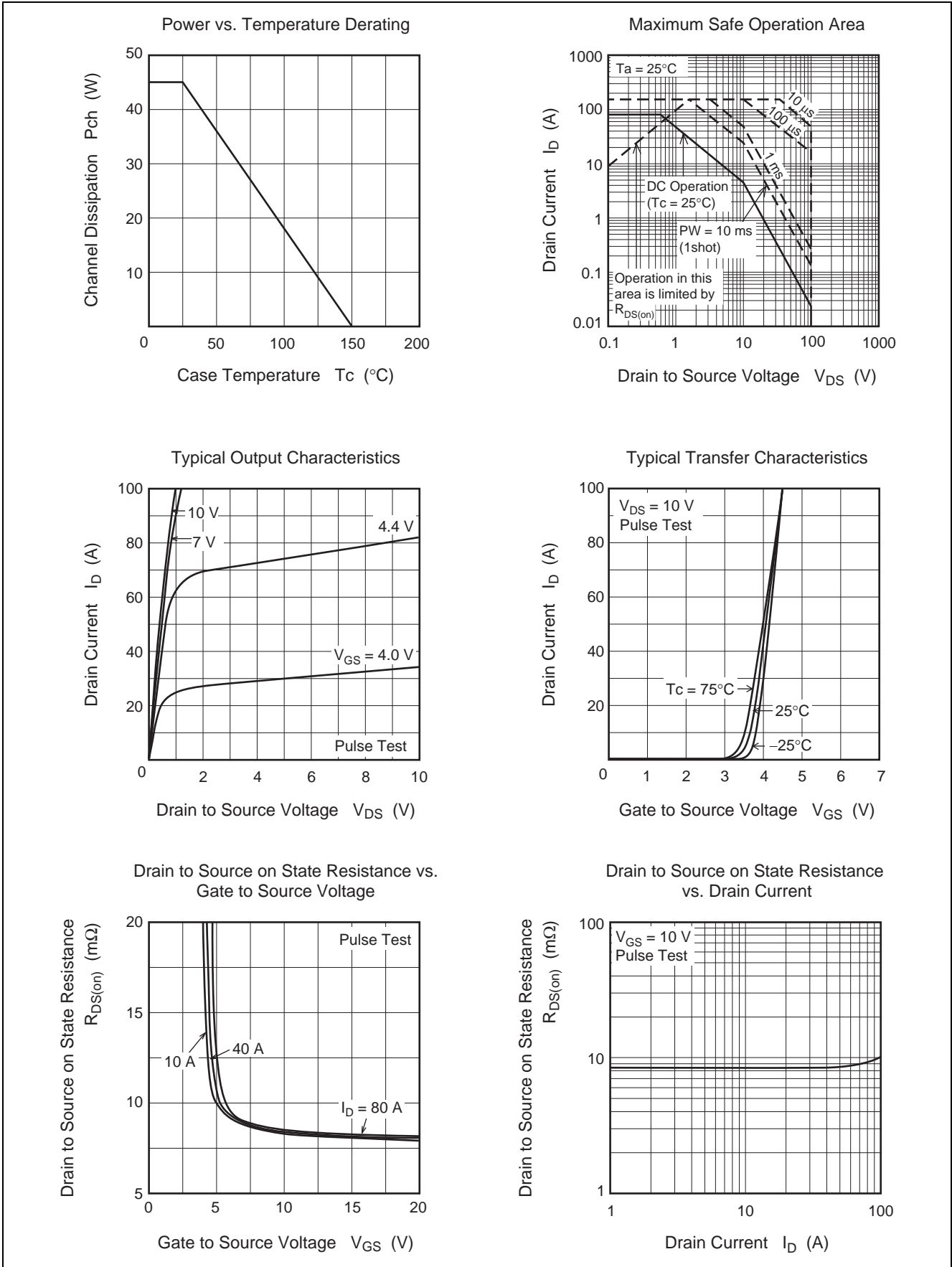
Electrical Characteristics

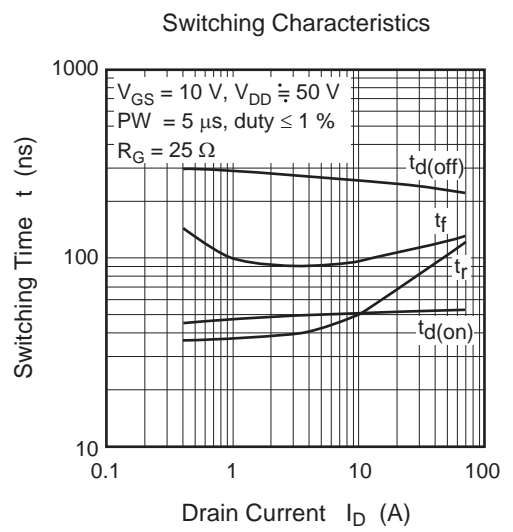
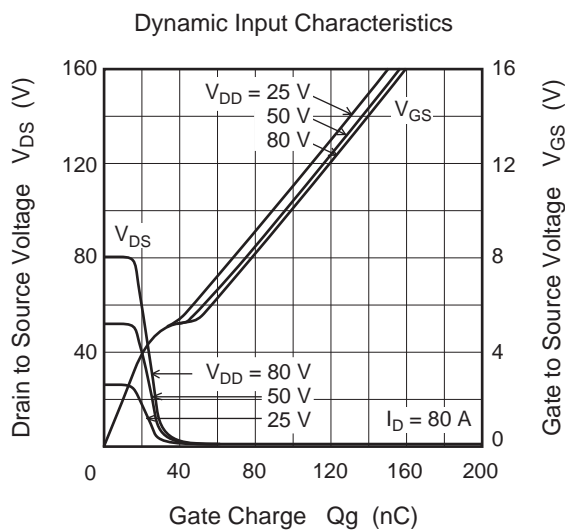
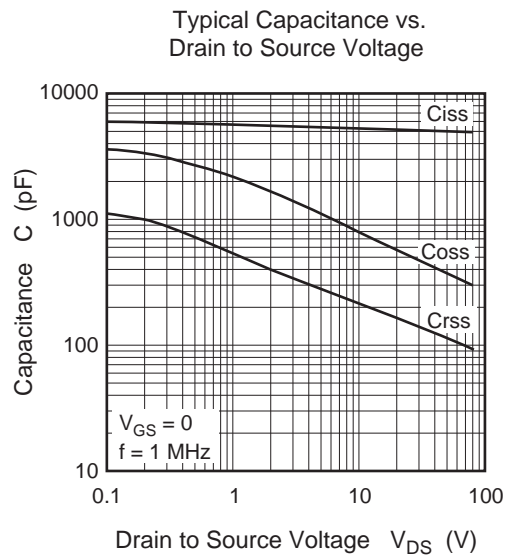
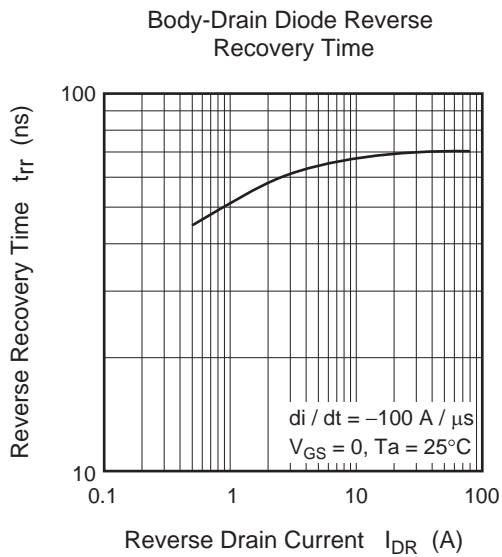
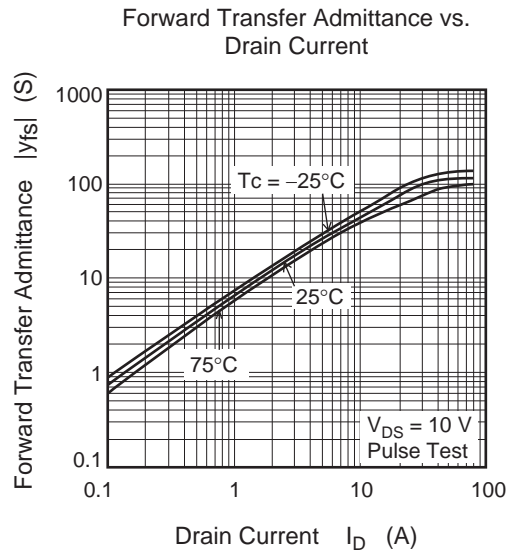
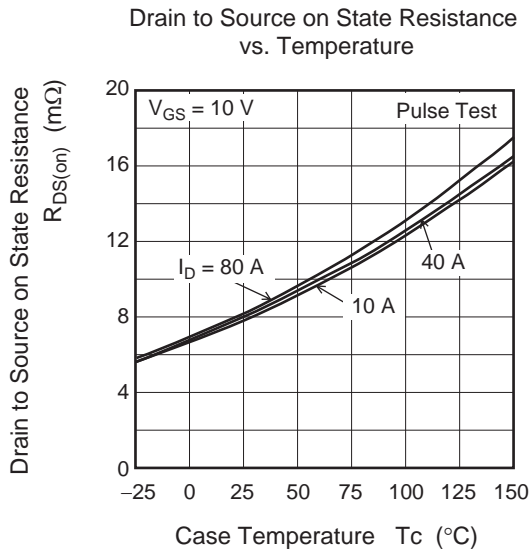
(Ta = 25°C)

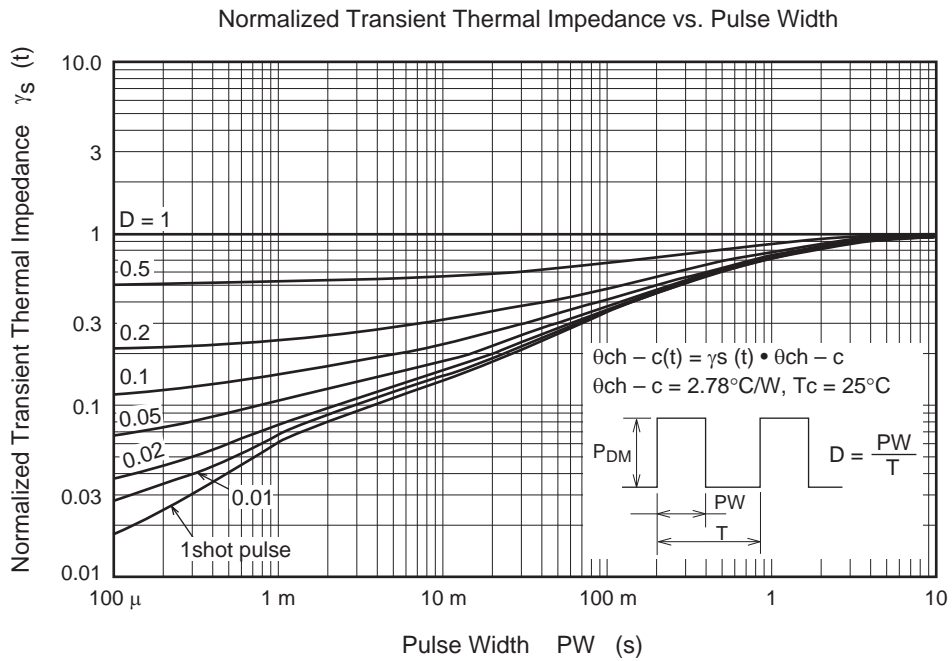
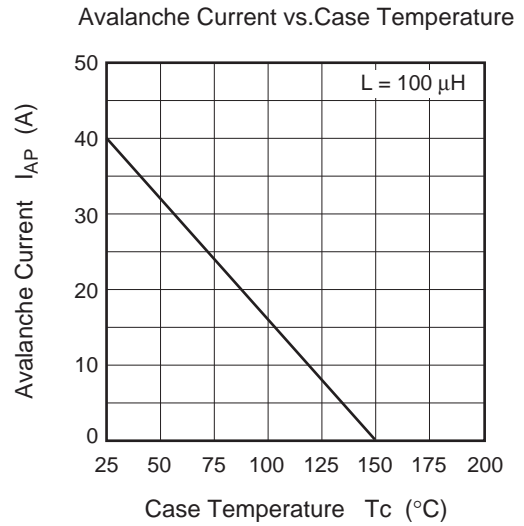
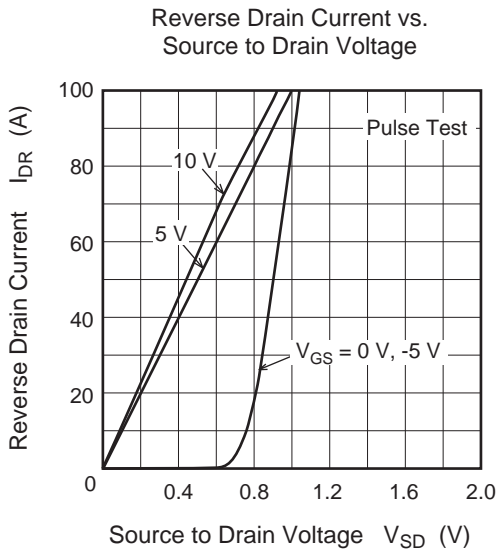
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	100	—	—	V	$I_D = 1 \text{ mA}, V_{GS} = 0$
Zero gate voltage drain current	I_{DSS}	—	—	100	μA	$V_{DS} = 100 \text{ V}, V_{GS} = 0$
Gate to source leak current	I_{GSS}	—	—	± 0.1	μA	$V_{GS} = \pm 20 \text{ V}, V_{DS} = 0$
Gate to source cutoff voltage	$V_{GS(off)}$	2.0	3.0	4.0	V	$I_D = 1 \text{ mA}, V_{DS} = 10 \text{ V}$ ^{Note3}
Static drain to source on state voltage	$V_{DS(on)}$	—	0.34	0.44	V	$I_D = 40 \text{ A}, V_{GS} = 10 \text{ V}$ ^{Note3}
Static drain to source on state resistance	$R_{DS(on)}$	—	8.5	11	$\text{m}\Omega$	$I_D = 40 \text{ A}, V_{GS} = 10 \text{ V}$ ^{Note3}
Input capacitance	C_{iss}	—	5200	—	pF	$V_{DS} = 10 \text{ V}$
Output capacitance	C_{oss}	—	820	—	pF	$V_{GS} = 0$
Reverse transfer capacitance	C_{rss}	—	220	—	pF	$f = 1 \text{ MHz}$
Turn-on delay time	$t_{d(on)}$	—	52	—	ns	$V_{DD} = 50 \text{ V}$
Rise time	t_r	—	100	—	ns	$I_D = 40 \text{ A}$
Turn-off delay time	$t_{d(off)}$	—	230	—	ns	$V_{GS} = 10 \text{ V}$
Fall time	t_f	—	125	—	ns	$R_G = 25 \Omega$
Body-drain diode forward voltage	V_{DF}	—	0.9	1.5	V	$I_F = 40 \text{ A}, V_{GS} = 0$
Body-drain diode reverse recovery time	t_{rr}	—	70	—	ns	$I_F = 80 \text{ A}, V_{GS} = 0$ $di_F/dt = 100 \text{ A}/\mu\text{s}$

Notes: 3. Pulse test

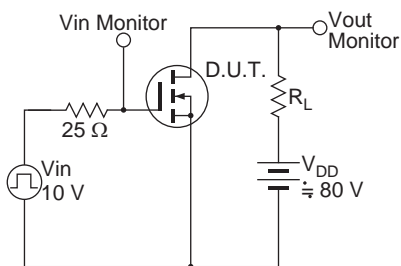
Main Characteristics



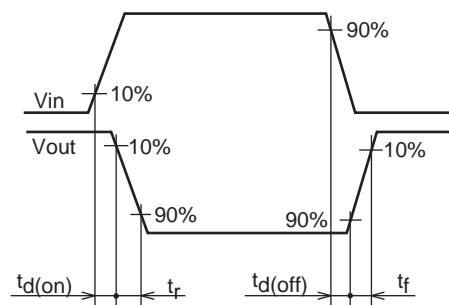




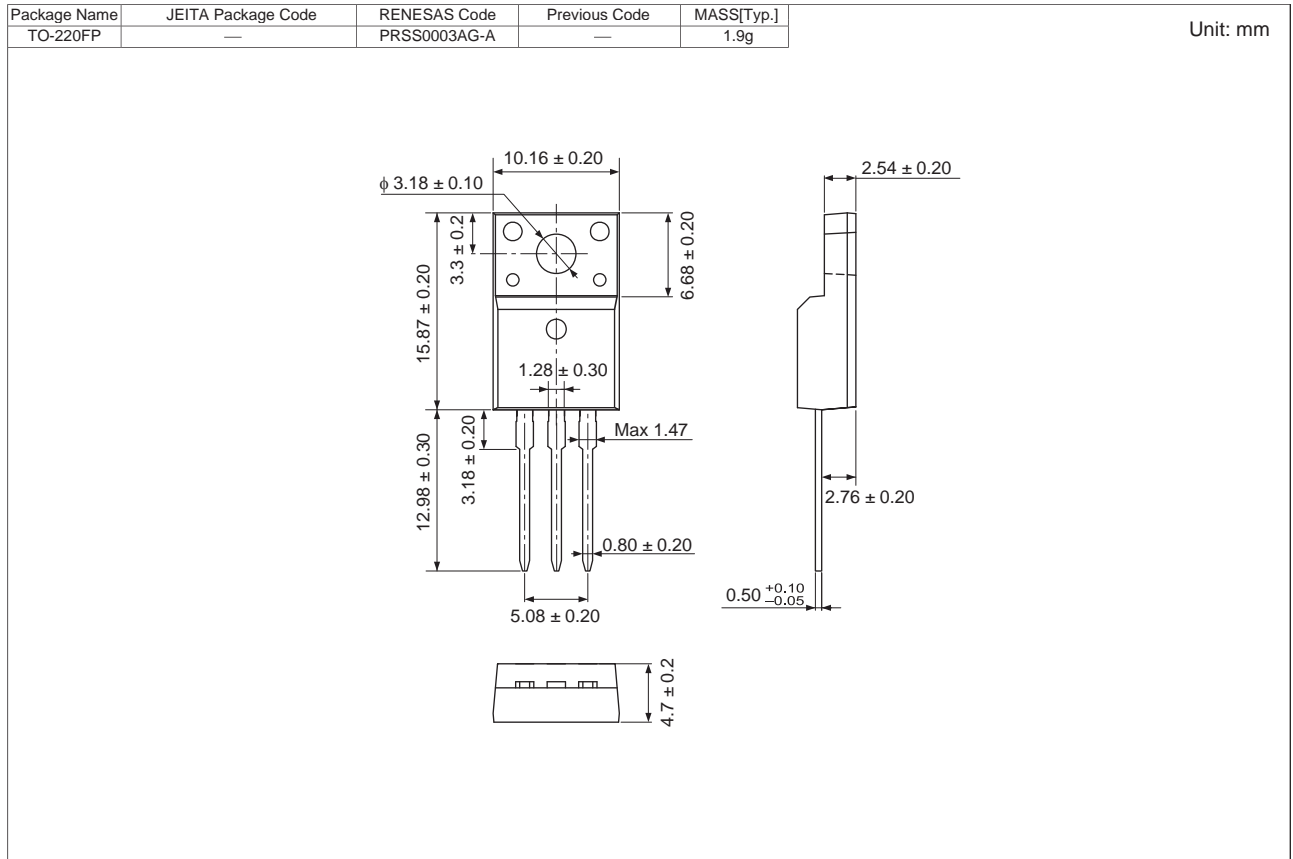
Switching Time Test Circuit



Waveform



Package Dimensions



Ordering Information

Orderable Part Number	Quantity	Shipping Container
RJK1008DPP-E0-T2	50 pcs	Magazine (Tube)

Note: The symbol of 2nd "-" is occasionally presented as "#".

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