



2SJ547

Silicon P Channel MOS FET

REJ03G0894-0300
(Previous: ADE-208-658A)
Rev.3.00
Sep 07, 2005

Description

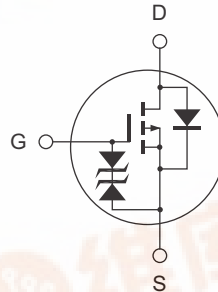
High speed power switching

Features

- Low on-resistance
 $R_{DS(on)} = 0.16 \Omega$ typ.
- 4 V gate drive devices
- High speed switching

Outline

RENESAS Package code: PRSS0003AD-A
(Package name: TO-220FM)



1. Gate
2. Drain
3. Source

Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Value	Unit
Drain to source voltage	V_{DSS}	-60	V
Gate to source voltage	V_{GSS}	±20	V
Drain current	I_D	-10	A
Drain peak current	$I_{D(pulse)}$ ^{Note 1}	-40	A
Body to drain diode reverse drain current	I_{DR}	-10	A
Avalanche current	I_{AP} ^{Note 3}	-10	A
Avalanche energy	E_{AR} ^{Note 3}	8.5	mJ
Channel dissipation	P_{ch} ^{Note 2}	20	W
Channel temperature	T_{ch}	150	°C
Storage temperature	T_{stg}	-55 to +150	°C

- Notes: 1. $PW \leq 10 \mu s$, duty cycle $\leq 1\%$
 2. Value at $T_c = 25^\circ C$
 3. Value at $T_{ch} = 25^\circ C$, $R_g \geq 50 \Omega$

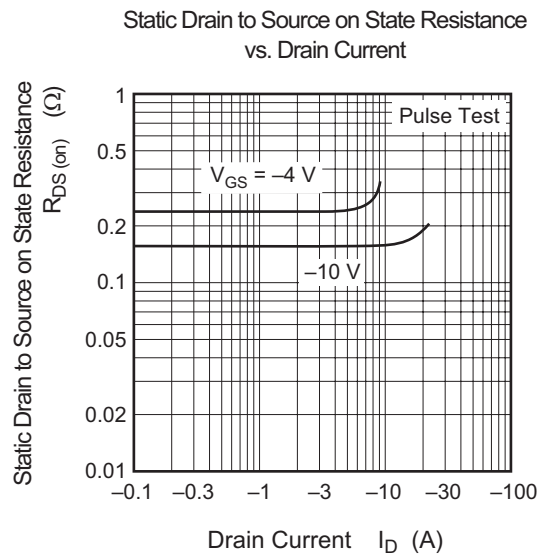
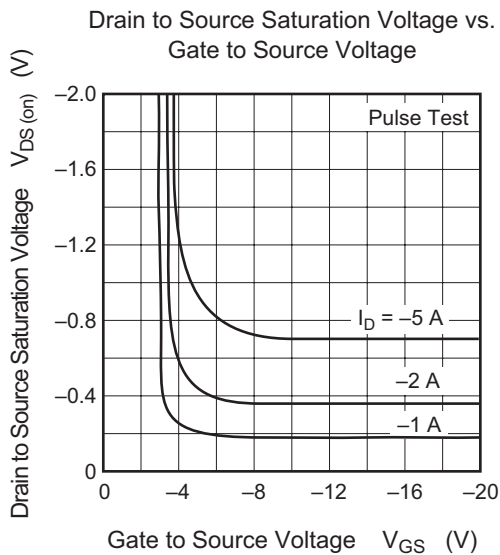
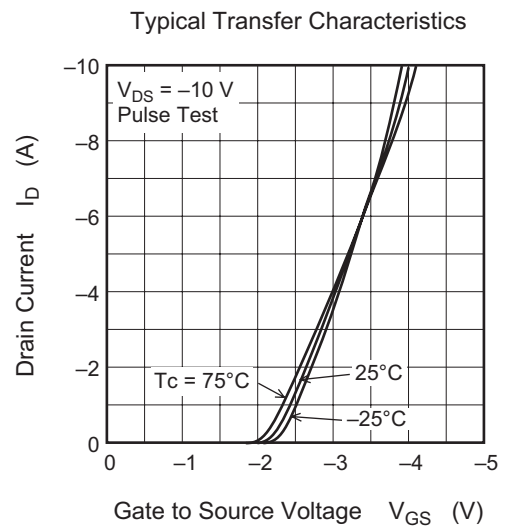
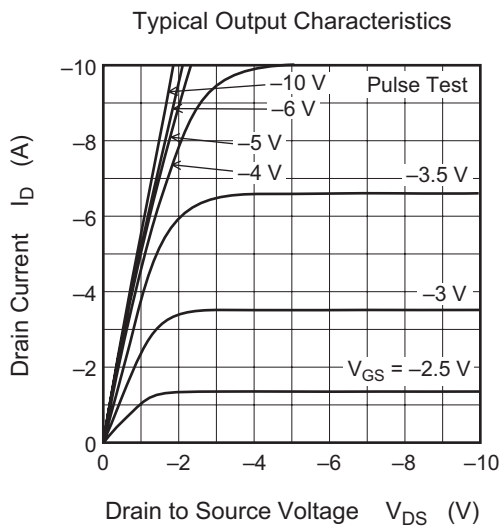
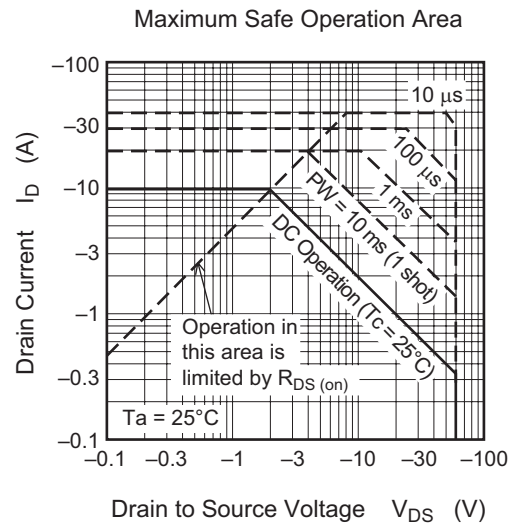
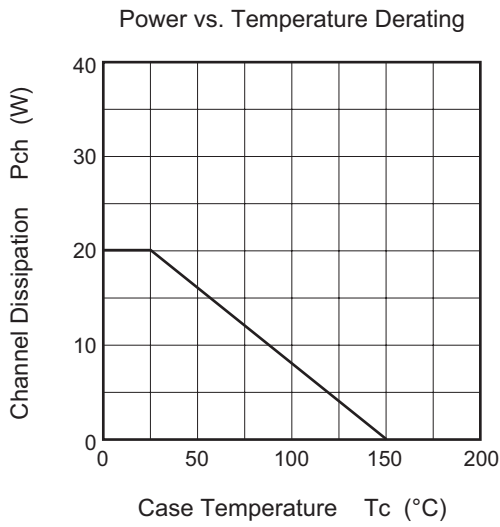
Electrical Characteristics

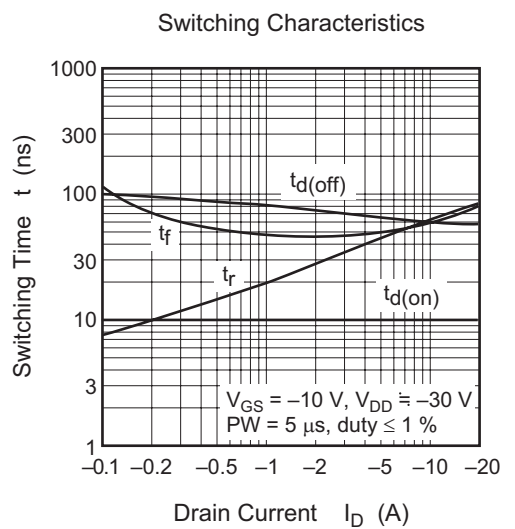
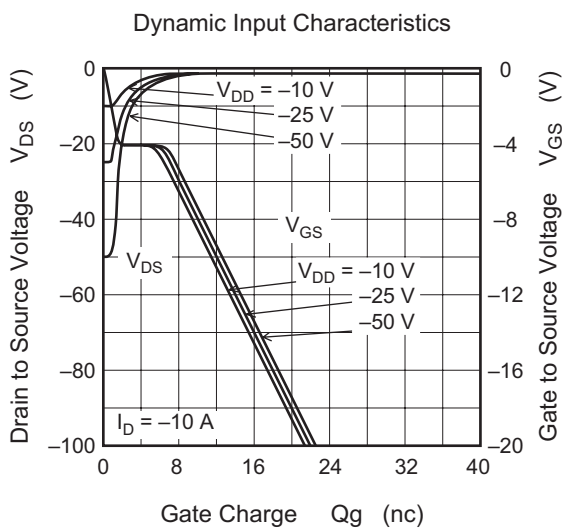
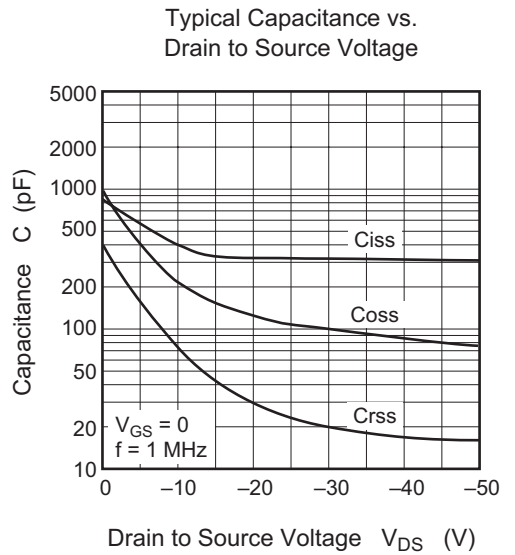
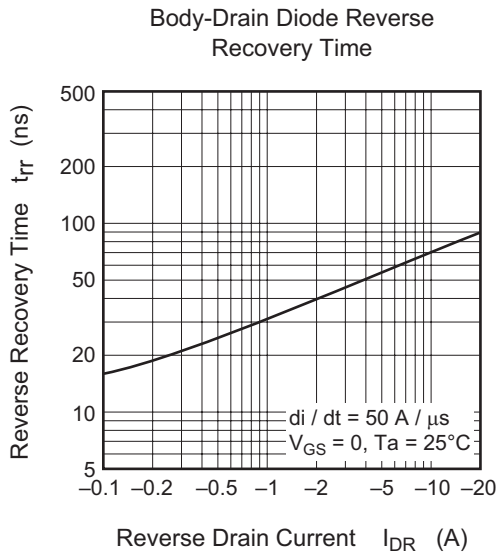
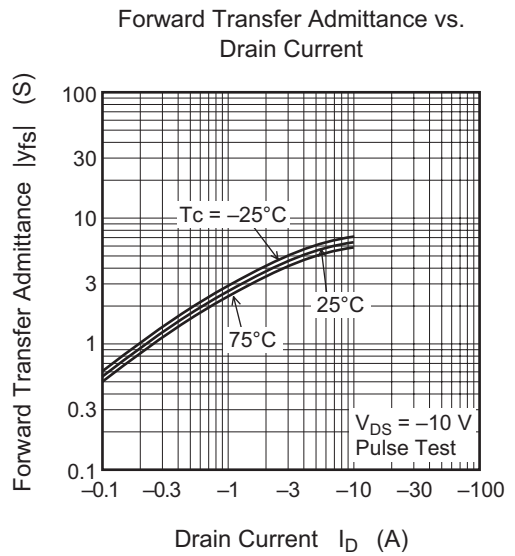
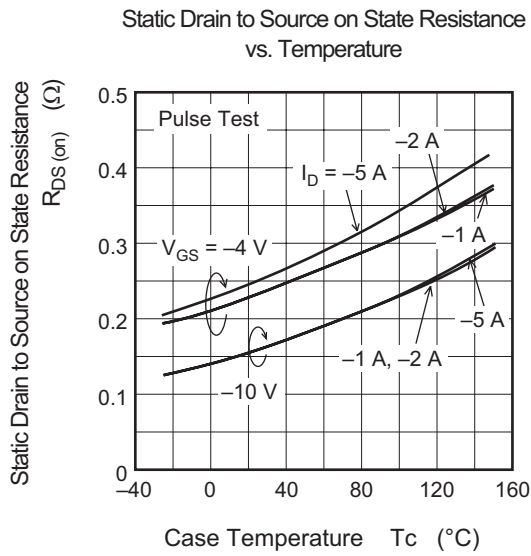
(Ta = 25°C)

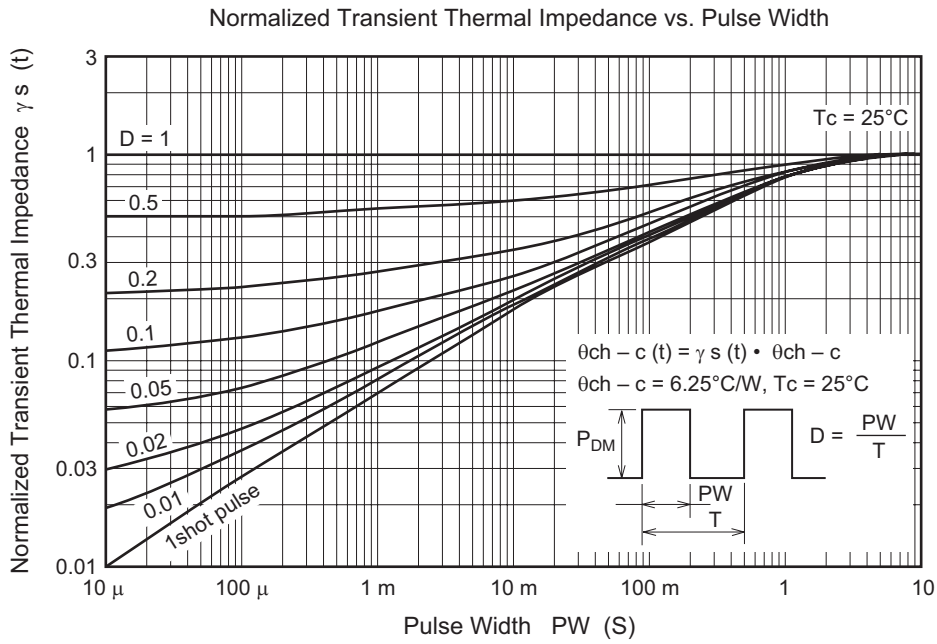
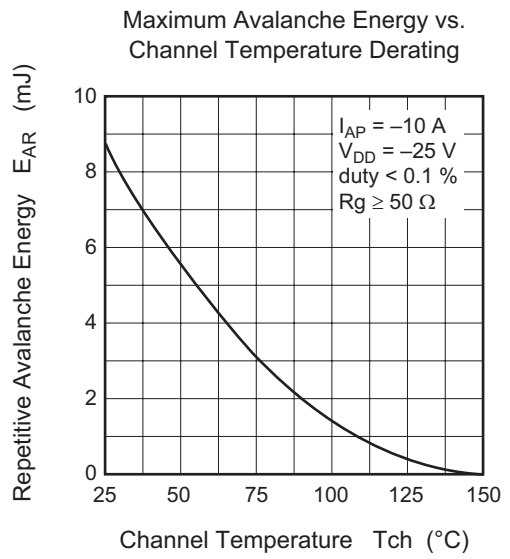
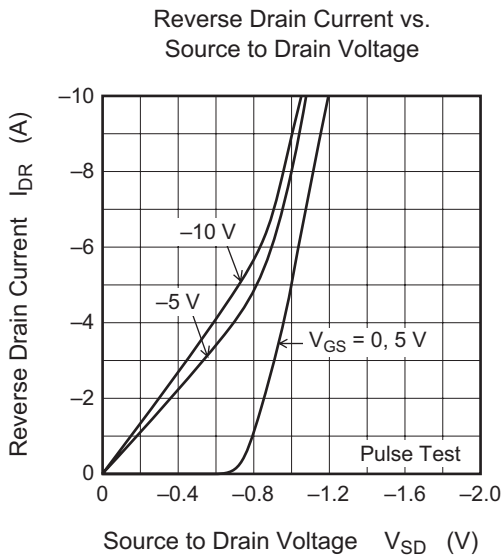
Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	-60	—	—	V	$I_D = -10 \text{ mA}$, $V_{GS} = 0$
Gate to source breakdown voltage	$V_{(BR)GSS}$	±20	—	—	V	$I_G = \pm 100 \mu A$, $V_{DS} = 0$
Zero gate voltage drain current	I_{DSS}	—	—	-10	μA	$V_{DS} = -60 \text{ V}$, $V_{GS} = 0$
Gate to source leak current	I_{GSS}	—	—	±10	μA	$V_{GS} = \pm 16 \text{ V}$, $V_{DS} = 0$
Gate to source cutoff voltage	$V_{GS(off)}$	-1.0	—	-2.0	V	$I_D = -1 \text{ mA}$, $V_{DS} = -10 \text{ V}$
Static drain to source on state resistance	$R_{DS(on)}$	—	0.16	0.21	Ω	$I_D = -5 \text{ A}$, $V_{GS} = -10 \text{ V}$ ^{Note 4}
	$R_{DS(on)}$	—	0.23	0.36	Ω	$I_D = -5 \text{ A}$, $V_{GS} = -4 \text{ V}$ ^{Note 4}
Forward transfer admittance	$ y_{fs} $	3.5	5.5	—	S	$I_D = -5 \text{ A}$, $V_{DS} = -10 \text{ V}$ ^{Note 4}
Input capacitance	C_{iss}	—	400	—	pF	$V_{DS} = -10 \text{ V}$
Output capacitance	C_{oss}	—	220	—	pF	$V_{GS} = 0$
Reverse transfer capacitance	C_{rss}	—	75	—	pF	$f = 1 \text{ MHz}$
Turn-on delay time	$t_{d(on)}$	—	10	—	ns	$V_{GS} = -10 \text{ V}$
Rise time	t_r	—	45	—	ns	$I_D = -5 \text{ A}$
Turn-off delay time	$t_{d(off)}$	—	65	—	ns	$R_L = 6 \Omega$
Fall time	t_f	—	50	—	ns	
Body to drain diode forward voltage	V_{DF}	—	-1.2	—	V	$I_F = -10 \text{ A}$, $V_{GS} = 0$
Body to drain diode reverse recovery time	t_{rr}	—	70	—	ns	$I_F = -10 \text{ A}$, $V_{GS} = 0$ $di_F/dt = 50 \text{ A}/\mu s$

- Note: 4. Pulse test

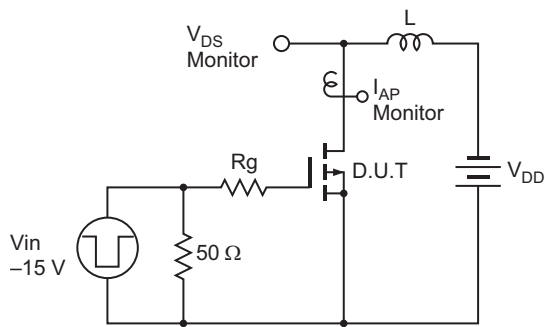
Main Characteristics



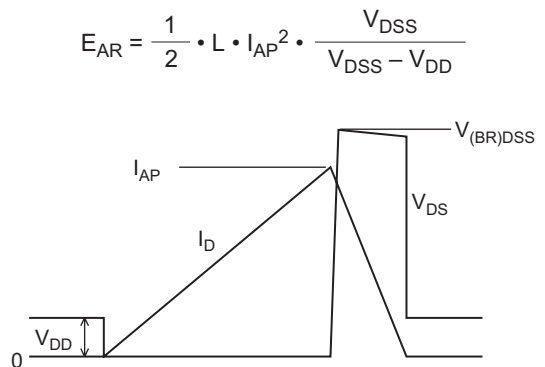


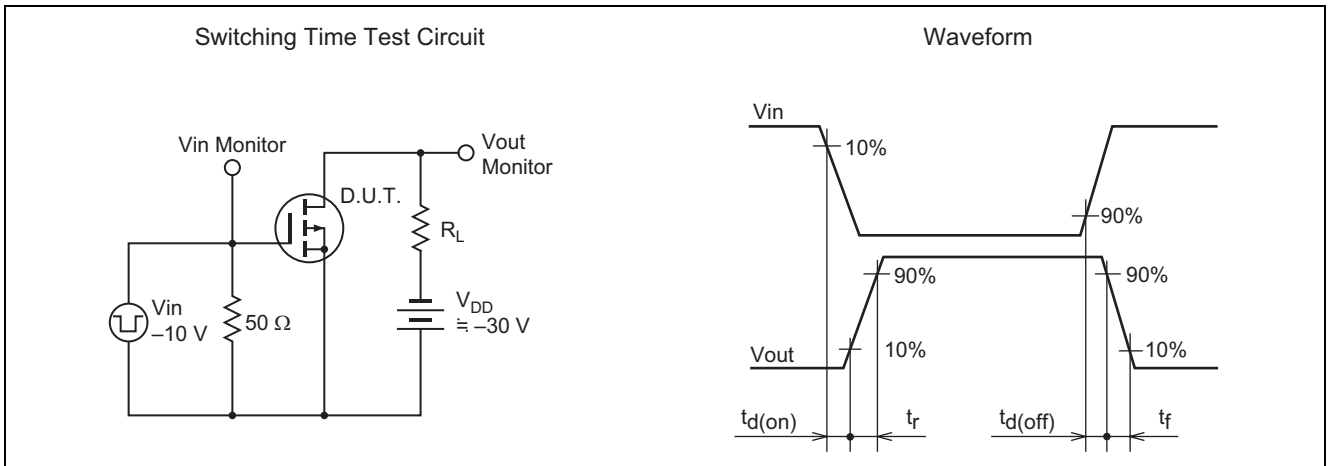


Avalanche Test Circuit

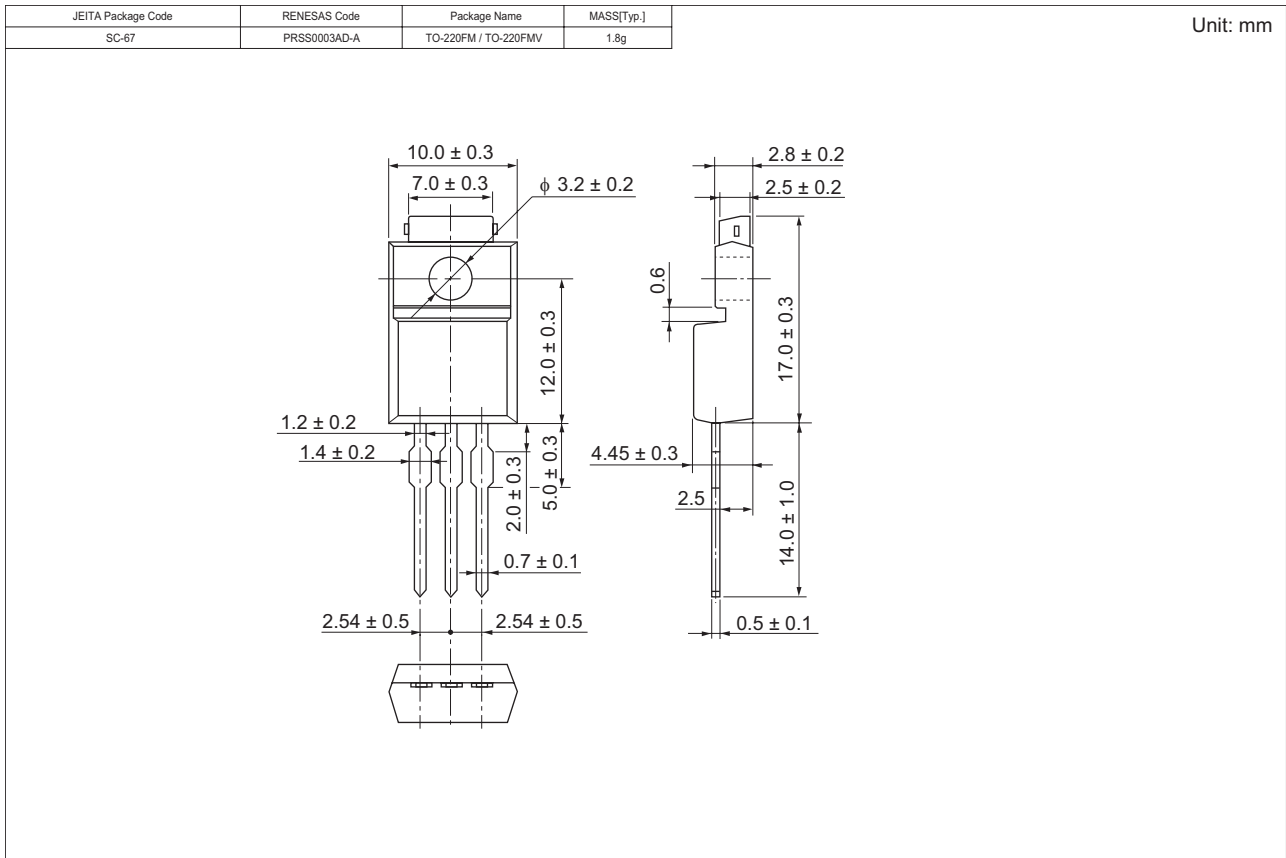


Avalanche Waveform





Package Dimensions



Ordering Information

Part Name	Quantity	Shipping Container
2SJ547-E	500 pcs	Box (Sack)

Note: For some grades, production may be terminated. Please contact the Renesas sales office to check the state of production before ordering the product.

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