



2SJ545

Silicon P Channel MOS FET

REJ03G0892-0400

Rev.4.00

Jun 05, 2006

Description

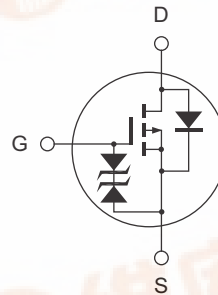
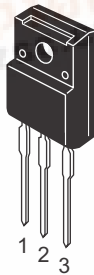
High speed power switching

Features

- Low on-resistance
 $R_{DS(on)} = 0.11 \Omega$ typ.
- Low drive current
- 4 V gate drive devices
- High speed switching

Outline

RENESAS Package code: PRSS0003AE-A
(Package name: TO-220C*FM)



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	-12	A
Drain peak current	$I_{D(pulse)}$ ^{Note 1}	-48	A
Body to drain diode reverse drain current	I_{DR}	-12	A
Avalanche current	I_{AP} ^{Note 3}	-12	A
Avalanche energy	E_{AR} ^{Note 3}	12	mJ
Channel dissipation	P_{ch} ^{Note 2}	25	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 $T_{ch} = 25^\circ C$, $R_g \geq 50 \Omega$

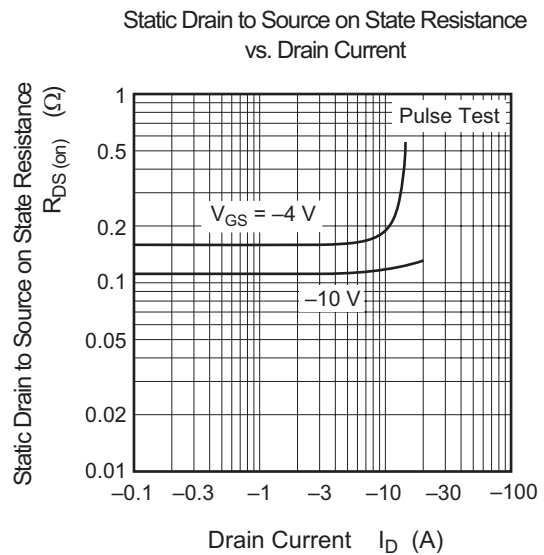
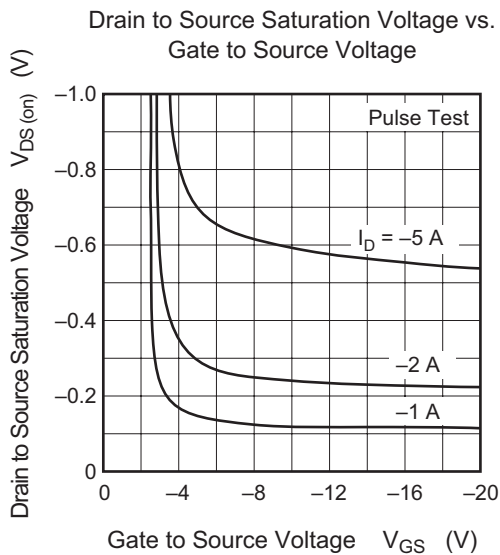
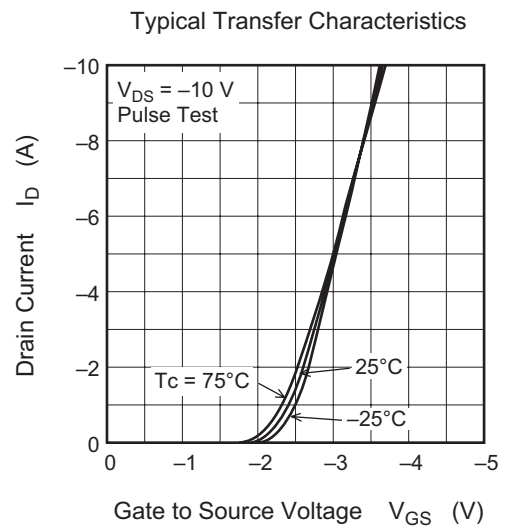
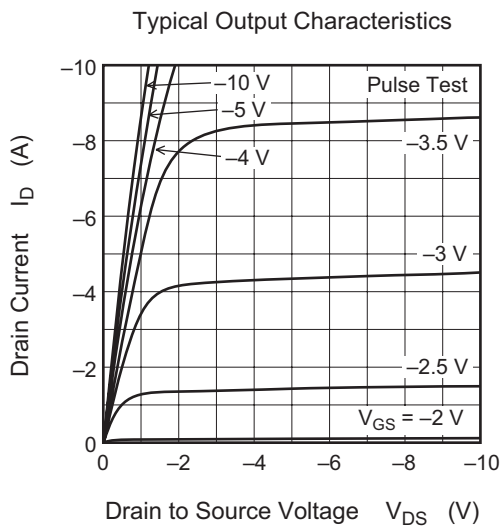
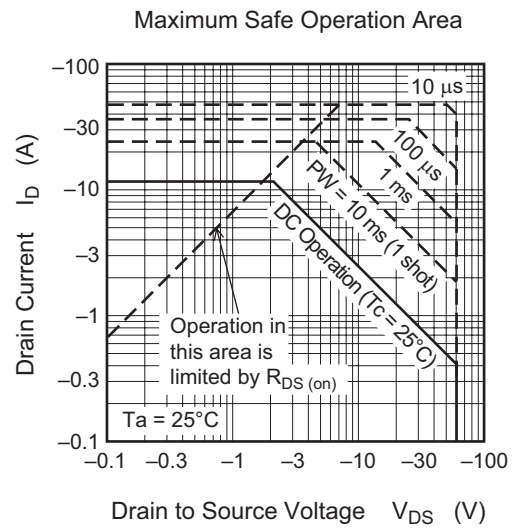
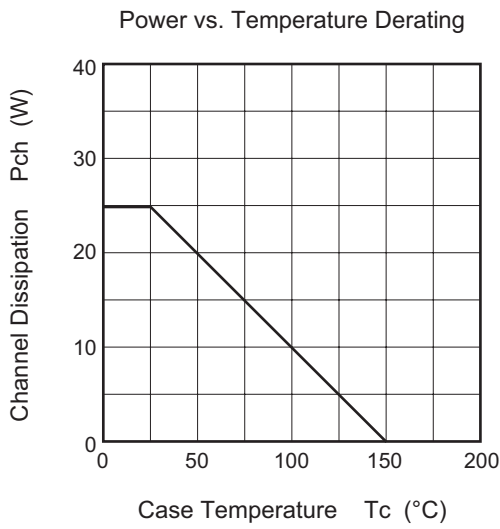
Electrical Characteristics

(Ta = 25°C)

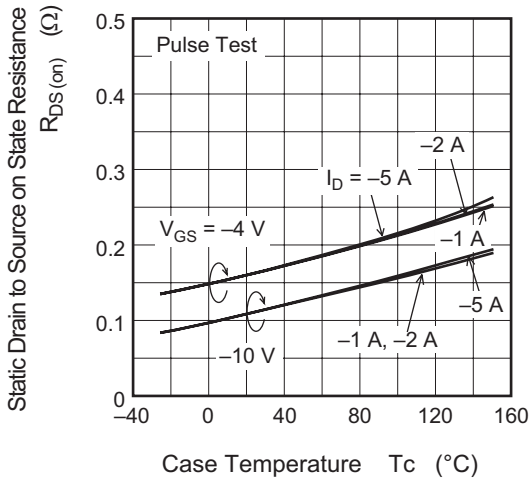
Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	-60	—	—	V	$I_D = -10 \text{ mA}$, $V_{GS} = 0$
Gate to source breakdown voltage	$V_{(BR)GSS}$	±20	—	—	V	$I_G = \pm 100 \mu A$, $V_{DS} = 0$
Zero gate voltage drain current	I_{DSS}	—	—	-10	μA	$V_{DS} = -60 \text{ V}$, $V_{GS} = 0$
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	$R_{DS(on)}$	—	0.11	0.15	Ω	$I_D = -6 \text{ A}$, $V_{GS} = -10 \text{ V}$ ^{Note 4}
	$R_{DS(on)}$	—	0.16	0.23	Ω	$I_D = -6 \text{ A}$, $V_{GS} = -4 \text{ V}$ ^{Note 4}
Forward transfer admittance	$ y_{fs} $	5	8	—	S	$I_D = -6 \text{ A}$, $V_{DS} = -10 \text{ V}$ ^{Note 4}
Input capacitance	C_{iss}	—	580	—	pF	$V_{DS} = -10 \text{ V}$ $V_{GS} = 0$ $f = 1 \text{ MHz}$
Output capacitance	C_{oss}	—	300	—	pF	
Reverse transfer capacitance	C_{rss}	—	85	—	pF	
Turn-on delay time	$t_{d(on)}$	—	10	—	ns	$V_{GS} = -10 \text{ V}$ $I_D = -6 \text{ A}$ $R_L = 6 \Omega$
Rise time	t_r	—	55	—	ns	
Turn-off delay time	$t_{d(off)}$	—	85	—	ns	
Fall time	t_f	—	60	—	ns	
Body to drain diode forward voltage	V_{DF}	—	-1.2	—	V	$I_F = -12 \text{ A}$, $V_{GS} = 0$
Body to drain diode reverse recovery time	t_{rr}	—	60	—	ns	$I_F = -12 \text{ A}$, $V_{GS} = 0$ $di_F/dt = 50 \text{ A}/\mu s$

- Note: 4. Pulse test

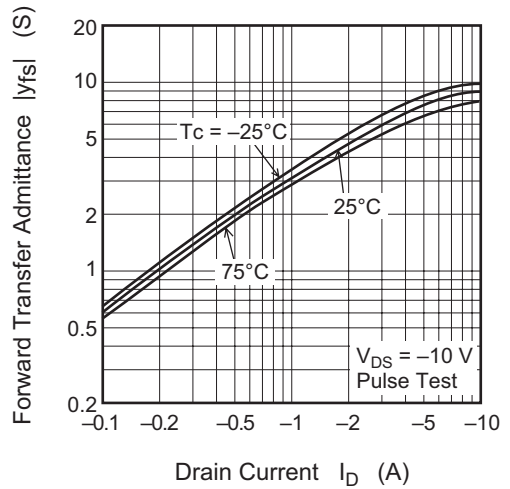
Main Characteristics



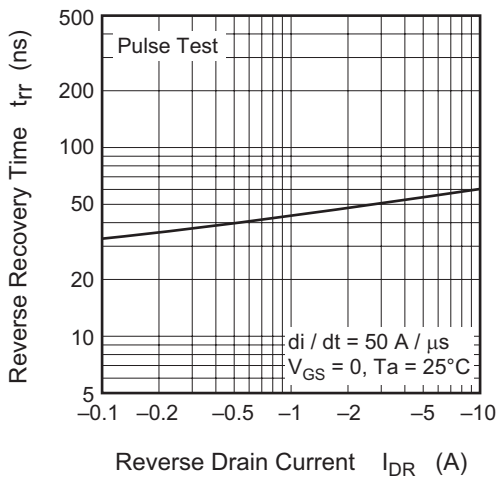
Static Drain to Source on State Resistance vs. Temperature



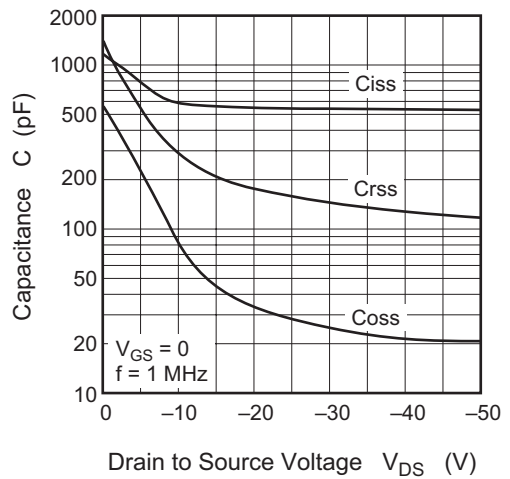
Forward Transfer Admittance vs. Drain Current



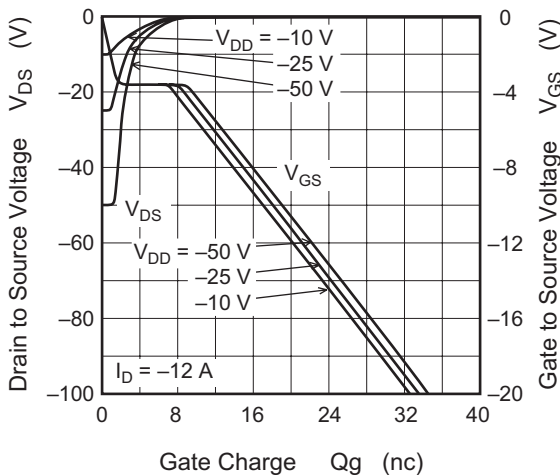
Body-Drain Diode Reverse Recovery Time



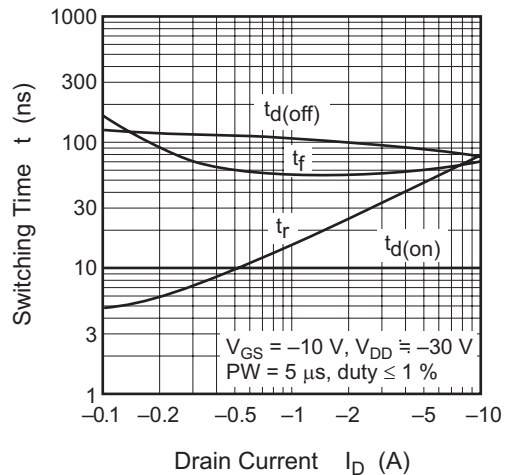
Typical Capacitance vs. Drain to Source Voltage

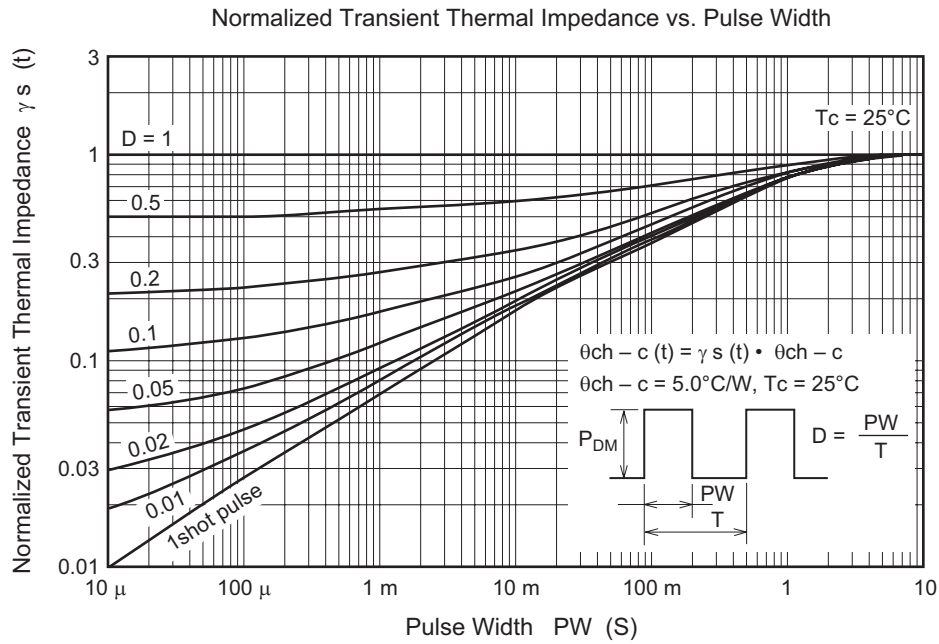
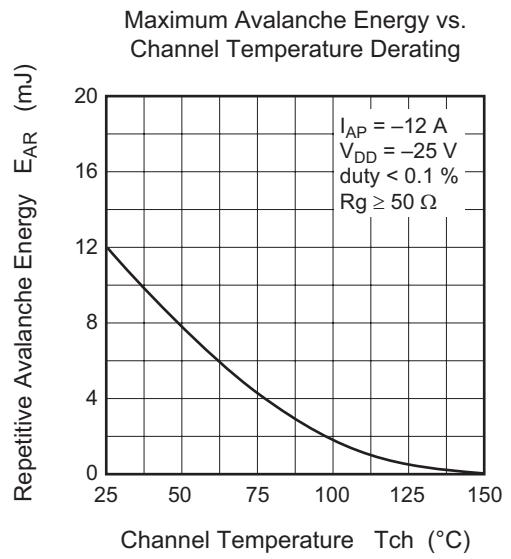
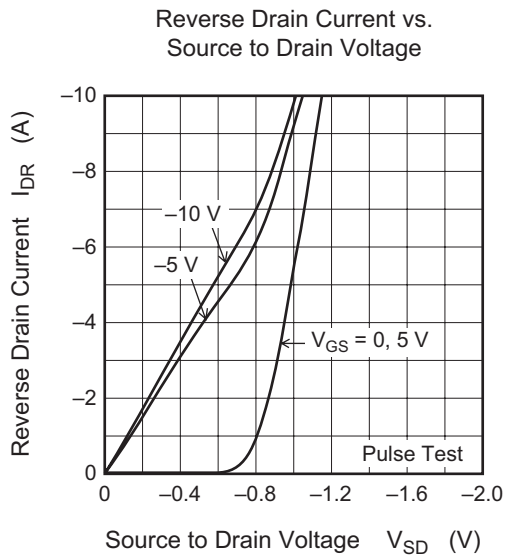


Dynamic Input Characteristics

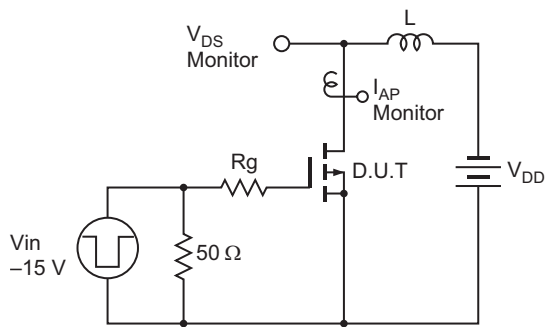


Switching Characteristics

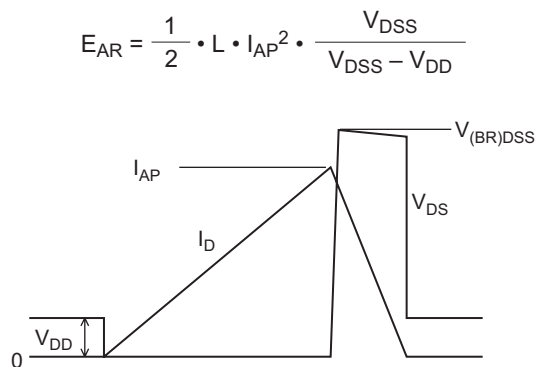


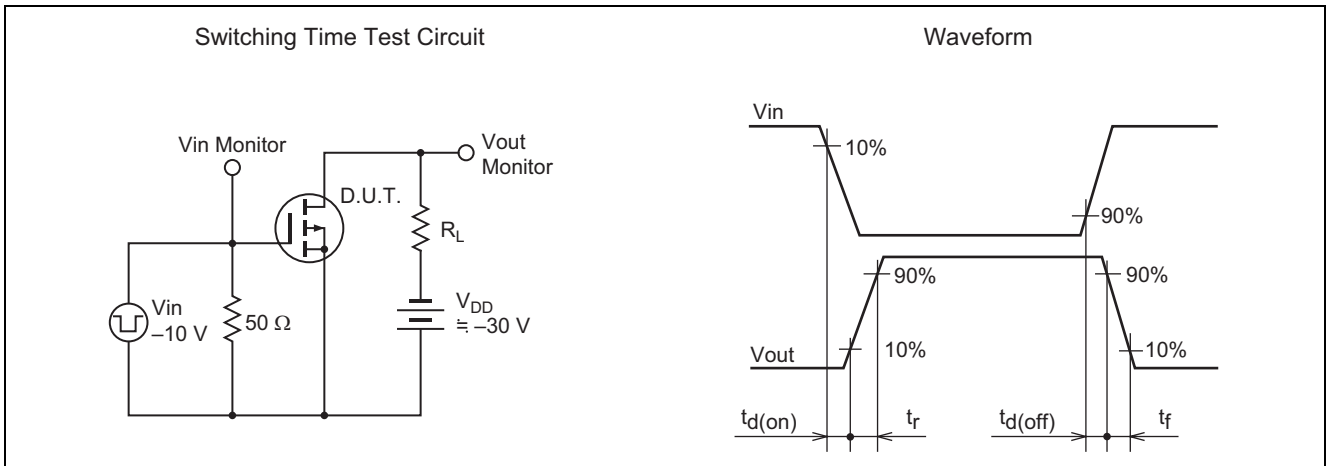


Avalanche Test Circuit

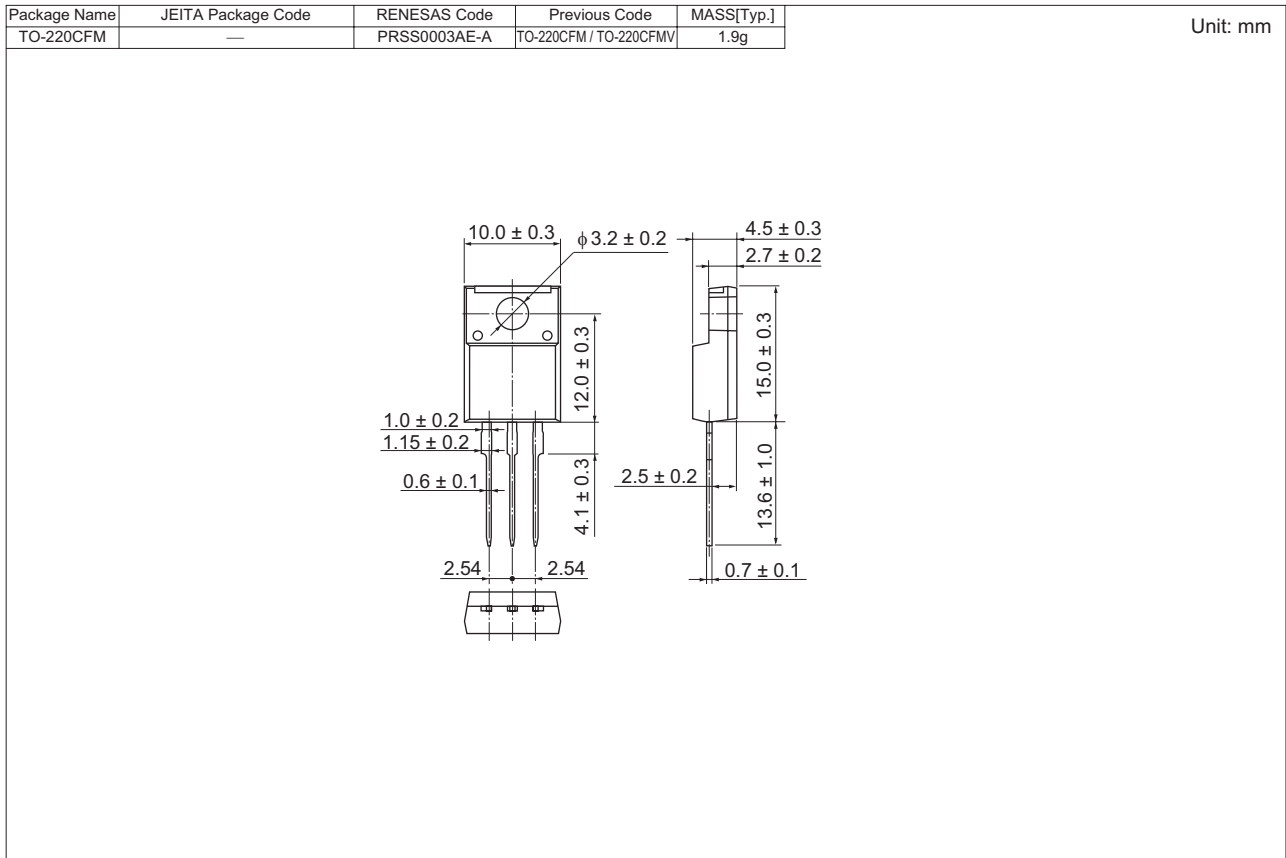


Avalanche Waveform





Package Dimensions



Ordering Information

Part Name	Quantity	Shipping Container
2SJ545-E	600 pcs	Box (Tube)

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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Tel: <1> (408) 382-7500, Fax: <1> (408) 382-7501

Renesas Technology Europe Limited

Dukes Meadow, Millboard Road, Bourne End, Buckinghamshire, SL8 5FH, U.K.
Tel: <44> (1628) 585-100, Fax: <44> (1628) 585-900

Renesas Technology (Shanghai) Co., Ltd.

Unit 204, 205, AZIACenter, No.1233 Lujiazui Ring Rd, Pudong District, Shanghai, China 200120
Tel: <86> (21) 5877-1818, Fax: <86> (21) 6887-7898

Renesas Technology Hong Kong Ltd.

7th Floor, North Tower, World Finance Centre, Harbour City, 1 Canton Road, Tsimshatsui, Kowloon, Hong Kong
Tel: <852> 2265-6688, Fax: <852> 2730-6071

Renesas Technology Taiwan Co., Ltd.

10th Floor, No.99, Fushing North Road, Taipei, Taiwan
Tel: <886> (2) 2715-2888, Fax: <886> (2) 2713-2999

Renesas Technology Singapore Pte. Ltd.

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Tel: <65> 6213-0200, Fax: <65> 6278-8001

Renesas Technology Korea Co., Ltd.

Kukje Center Bldg. 18th Fl., 191, 2-ka, Hangang-ro, Yongsan-ku, Seoul 140-702, Korea
Tel: <82> (2) 796-3115, Fax: <82> (2) 796-2145

Renesas Technology Malaysia Sdn. Bhd

Unit 906, Block B, Menara Amcorp, Amcorp Trade Centre, No.18, Jalan Persiaran Barat, 46050 Petaling Jaya, Selangor Darul Ehsan, Malaysia
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