

2SK2554

Silicon N Channel MOS FET

REJ03G1016-0600
(Previous: ADE-208-359D)
Rev.6.00
Sep 07, 2005

Application

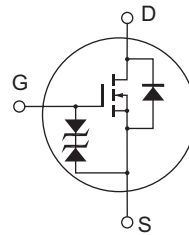
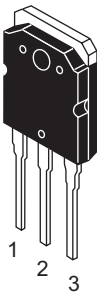
High speed power switching

Features

- Low on-resistance
- $R_{DS(on)} = 4.5 \text{ m}\Omega$ typ.
- High speed switching
- 4 V gate drive device can be driven from 5 V source

Outline

RENESAS Package code: PRSS0004ZE-A
(Package name: TO-3P)



1. Gate
2. Drain
(Flange)
3. Source

Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Ratings	Unit
Drain to source voltage	V _{DS}	60	V
Gate to source voltage	V _{GS}	±20	V
Drain current	I _D	75	A
Drain peak current	I _{D(pulse)} *1	300	A
Body to drain diode reverse drain current	I _{DR} *2	75	A
Avalanche current	I _{AP} *3	50	A
Avalanche energy	E _{AR} *3	214	mJ
Channel dissipation	P _{ch} *2	150	W
Channel temperature	T _{ch}	150	°C
Storage temperature	T _{stg}	-55 to +150	°C

- Notes: 1. PW ≤ 10 μs, duty cycle ≤ 1 %
 2. Value at T_c = 25°C
 3. Value at T_{ch} = 25°C, R_g ≥ 50 Ω

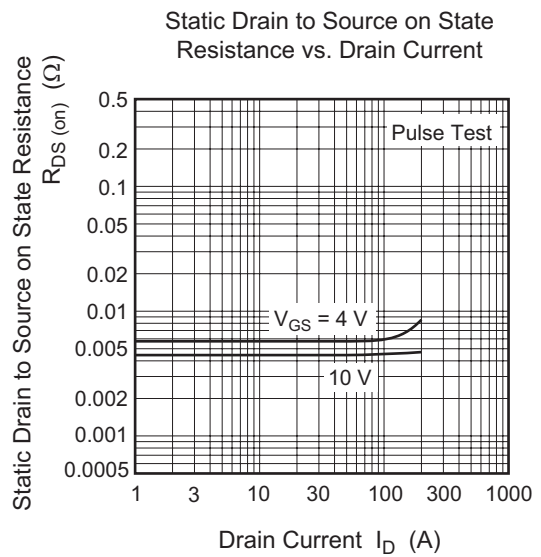
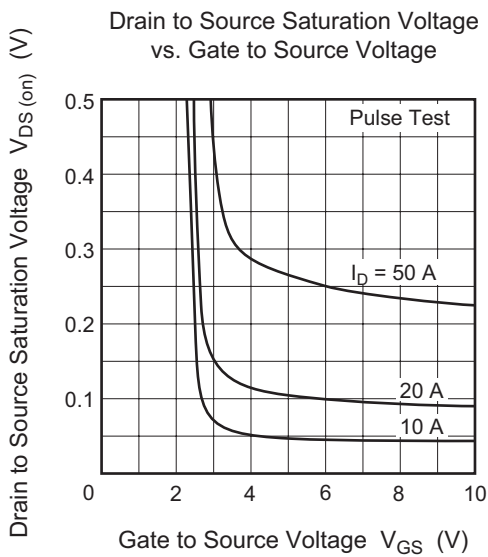
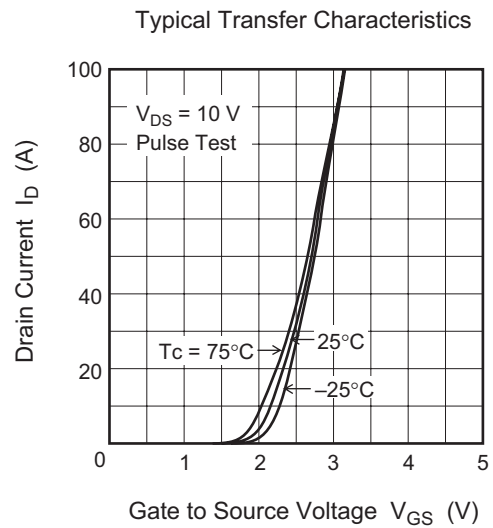
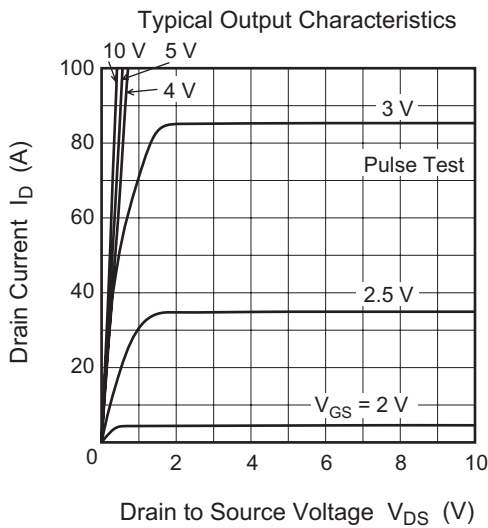
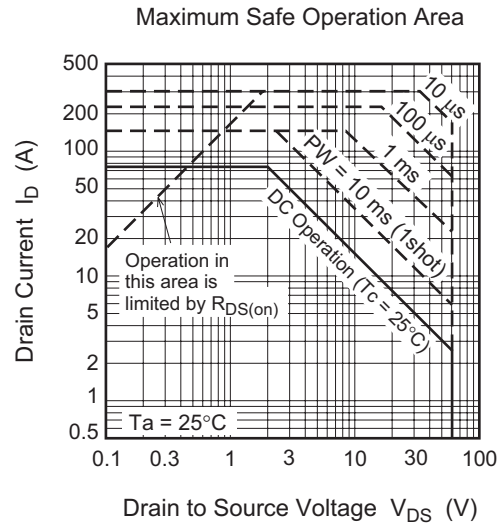
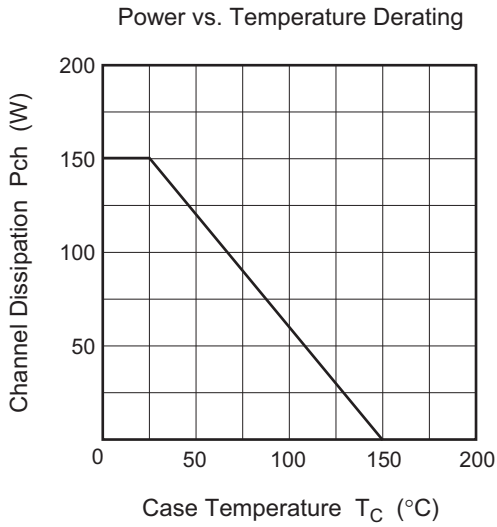
Electrical Characteristics

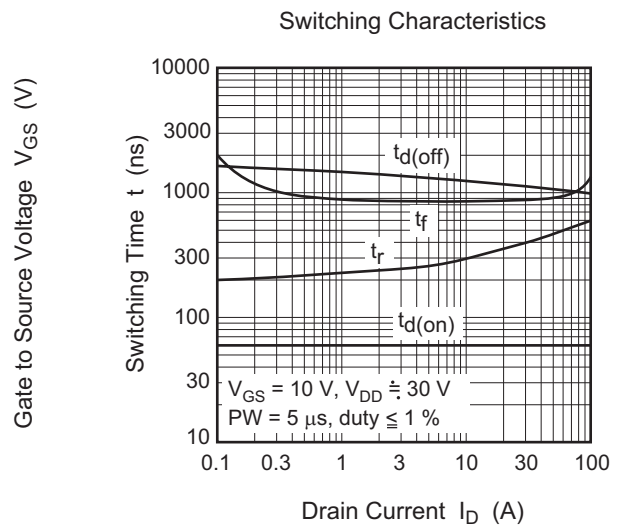
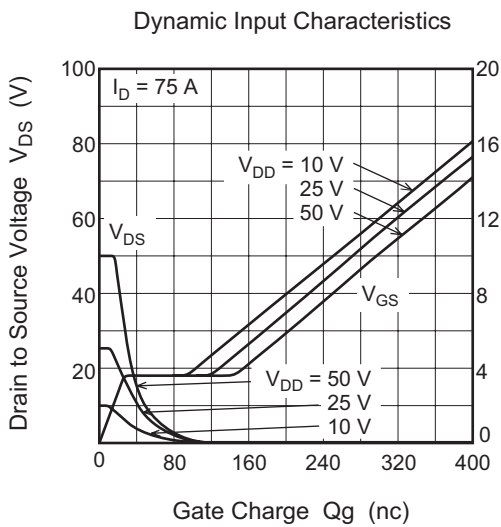
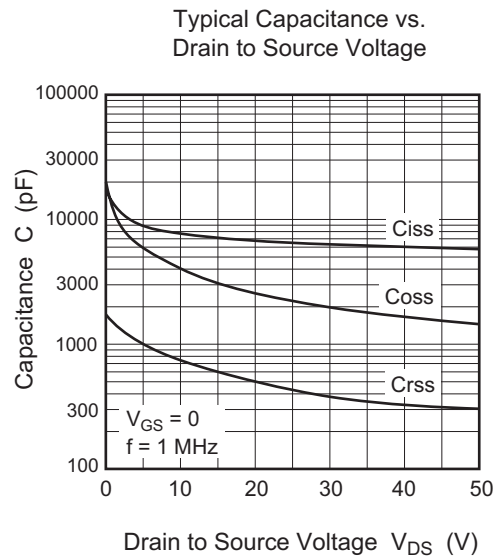
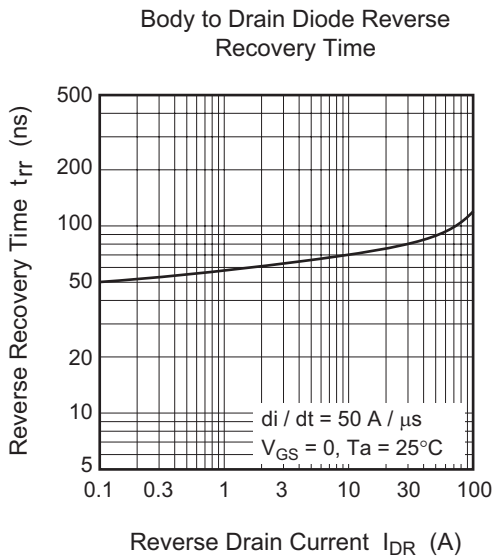
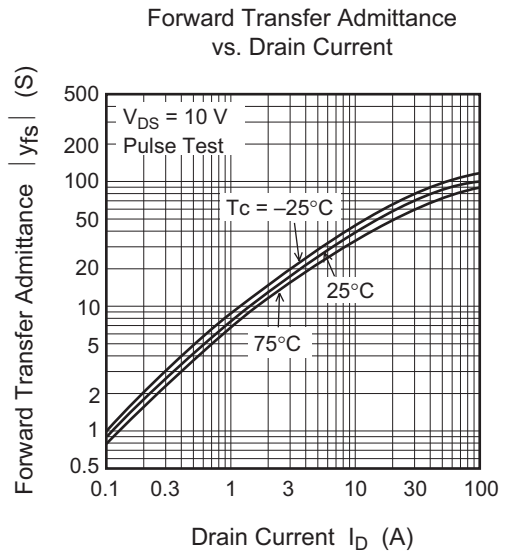
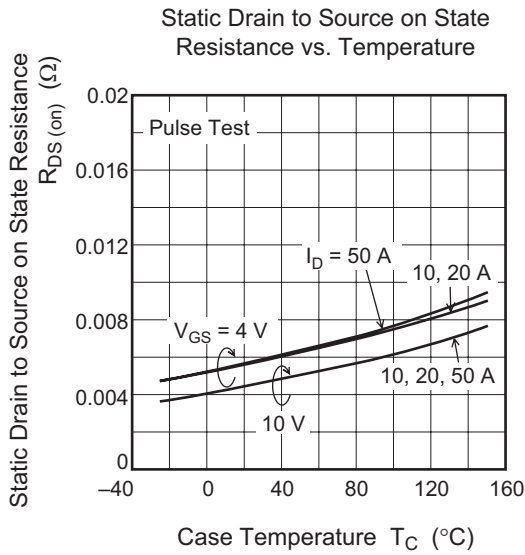
(Ta = 25°C)

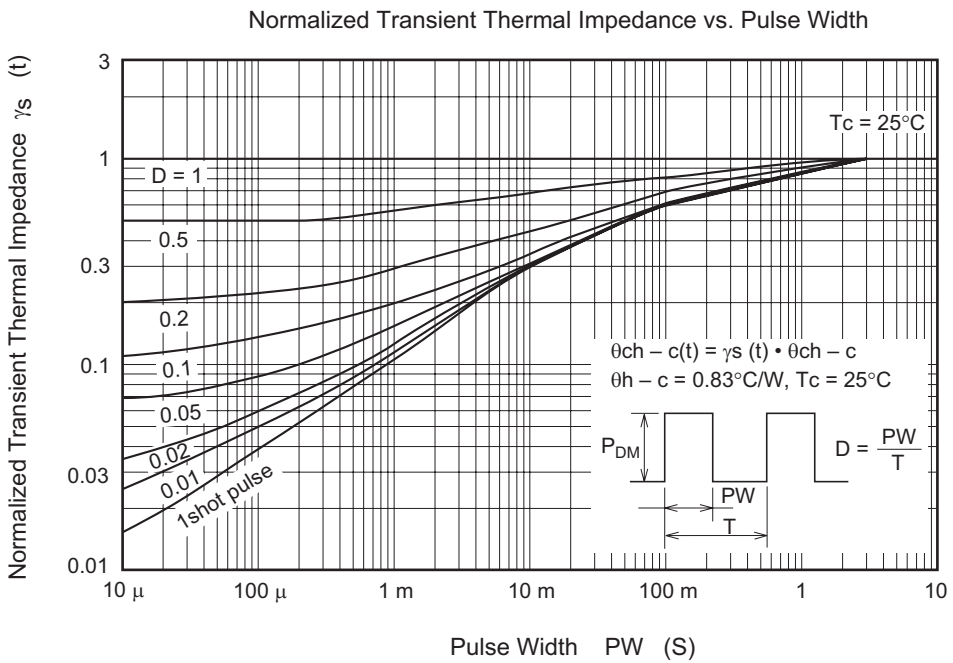
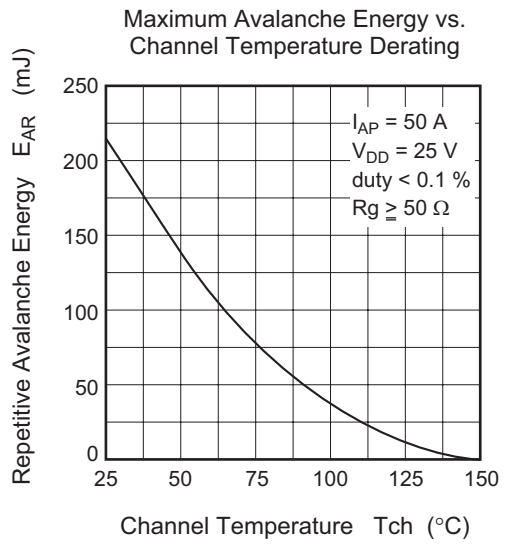
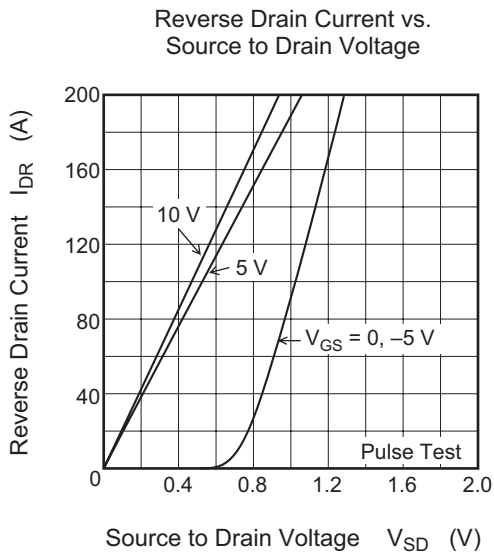
Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	V _{(BR)DSS}	60	—	—	V	I _D = 10 mA, V _{GS} = 0
Gate to source breakdown voltage	V _{(BR)GSS}	±20	—	—	V	I _G = ±100 μA, V _{DS} = 0
Gate to source leak current	I _{GSS}	—	—	±10	μA	V _{GS} = ±16 V, V _{DS} = 0
Zero gate voltage drain current	I _{DSS}	—	—	100	μA	V _{DS} = 60 V, V _{GS} = 0
Gate to source cutoff voltage	V _{GS(off)}	1.0	—	2.0	V	I _D = 1 mA, V _{DS} = 10 V
Static drain to source on state resistance	R _{DS(on)}	—	4.5	6	mΩ	I _D = 40 A, V _{GS} = 10 V*4
		—	5.8	10	mΩ	I _D = 40 A, V _{GS} = 4 V*4
Forward transfer admittance	y _{fs}	50	80	—	S	I _D = 40 A, V _{DS} = 10 V*4
Input capacitance	C _{iss}	—	7700	—	pF	V _{DS} = 10 V, V _{GS} = 0, f = 1 MHz
Output capacitance	C _{oss}	—	4100	—	pF	
Reverse transfer capacitance	C _{rss}	—	760	—	pF	
Turn-on delay time	t _{d(on)}	—	60	—	ns	I _D = 40 A, V _{GS} = 10 V, R _L = 0.75 Ω
Rise time	t _r	—	420	—	ns	
Turn-off delay time	t _{d(off)}	—	1200	—	ns	
Fall time	t _f	—	900	—	ns	
Body to drain diode forward voltage	V _{DF}	—	0.95	—	V	I _F = 75 A, V _{GS} = 0
Body to drain diode reverse recovery time	t _{rr}	—	105	—	ns	I _F = 75 A, V _{GS} = 0 di _F / dt = 50 A / μs

Note: 4. Pulse Test

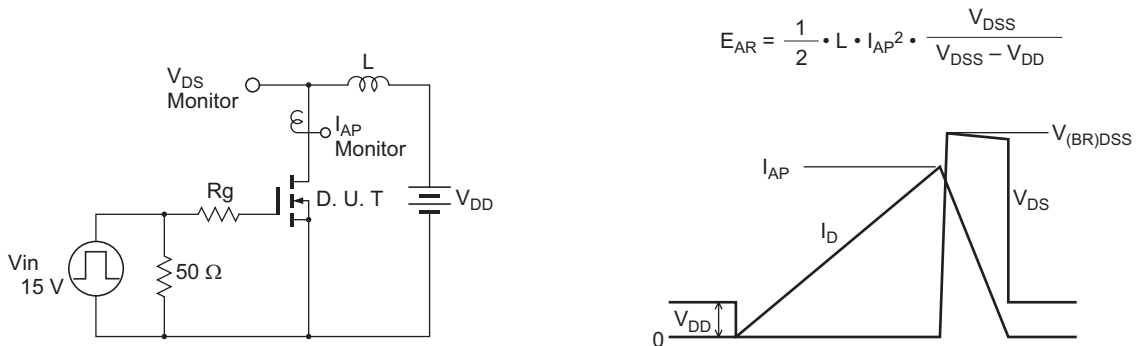
Main Characteristics

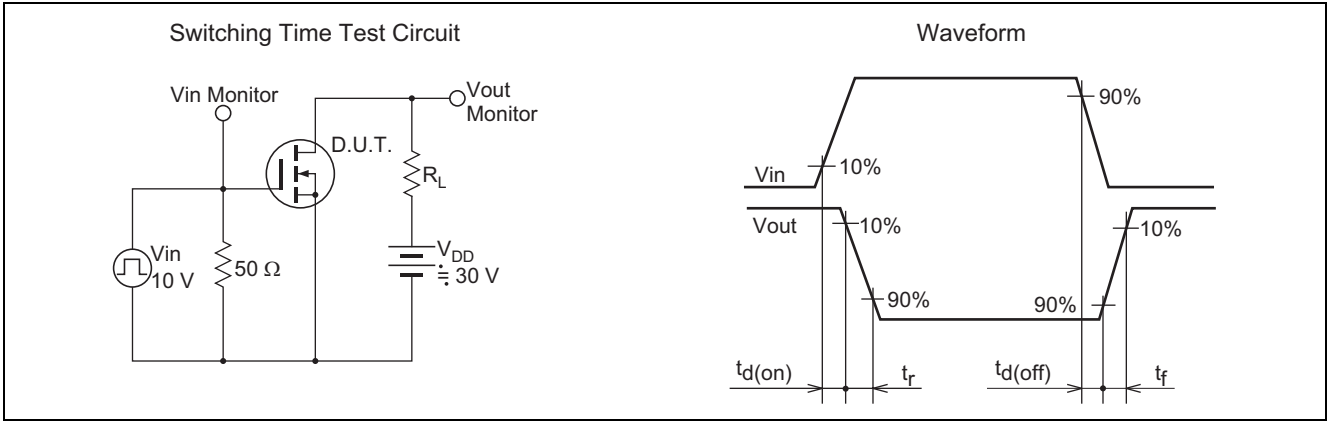




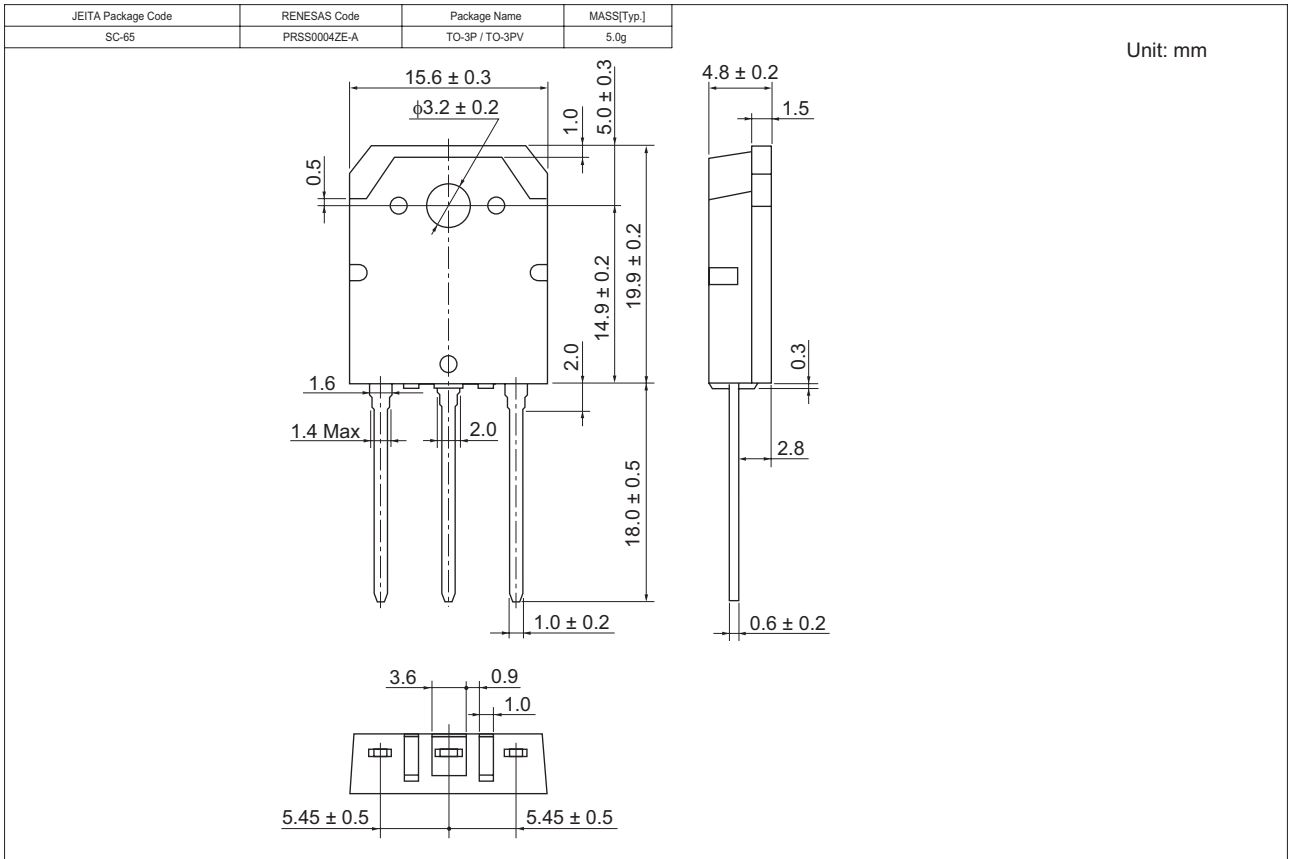


Avalanche Test Circuit and Waveform





Package Dimensions



Ordering Information

Part Name	Quantity	Shipping Container
2SK2554-E	30 pcs	Plastic magazine

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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