

2SJ496

Silicon P Channel MOS FET

REJ03G0870-0300
(Previous: ADE-208-482A)
Rev.3.00
Sep 07, 2005

Description

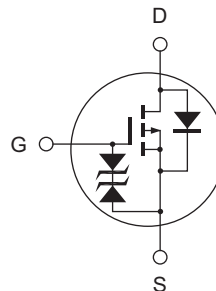
High speed power switching

Features

- Low on-resistance
 $R_{DS(on)} = 0.12 \Omega$ typ. (at $V_{GS} = -10$ V, $I_D = -2.5$ A)
- 4 V gate drive devices.
- Large current capacitance
 $I_D = -5$ A

Outline

RENESAS Package code: PRSS0003DC-A
(Package name: TO-92 Mod)



1. Source
2. Drain
3. Gate

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	-5	A
Drain peak current	I _{D (pulse)} ^{Note 1}	-20	A
Body to drain diode reverse drain current	I _{DR}	-5	A
Avalanche current	I _{AP} ^{Note 3}	-5	A
Avalanche energy	E _{AR} ^{Note 3}	2.14	mJ
Channel dissipation	P _{ch} ^{Note 2}	0.9	W
Channel temperature	T _{ch}	150	°C
Storage temperature	T _{stg}	-55 to +150	°C

Notes: 1. PW ≤ 100 μs, duty cycle ≤ 10%

2. Value at Ta = 25°C

3. Value at T_{ch} = 25°C, R_g ≥ 50 Ω

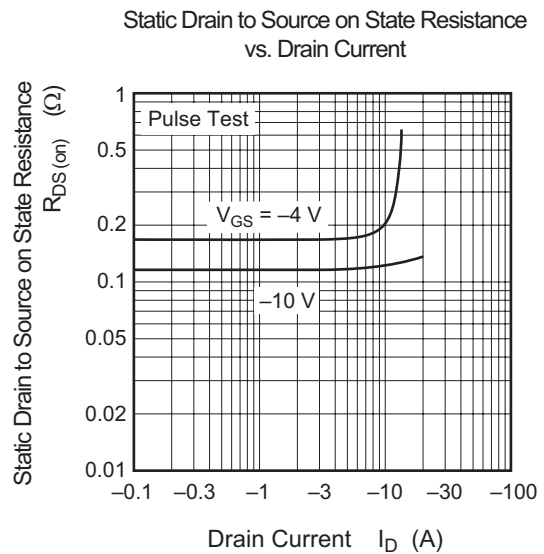
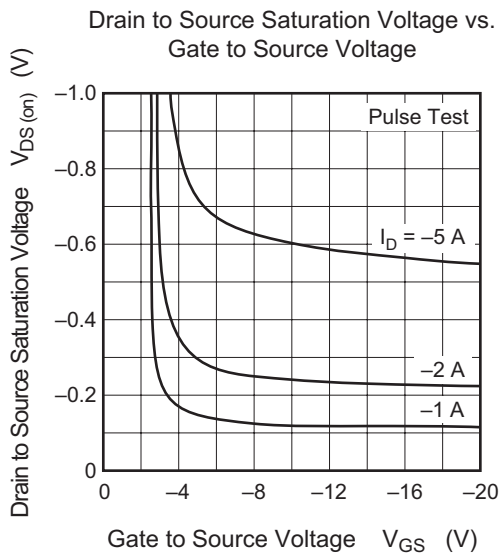
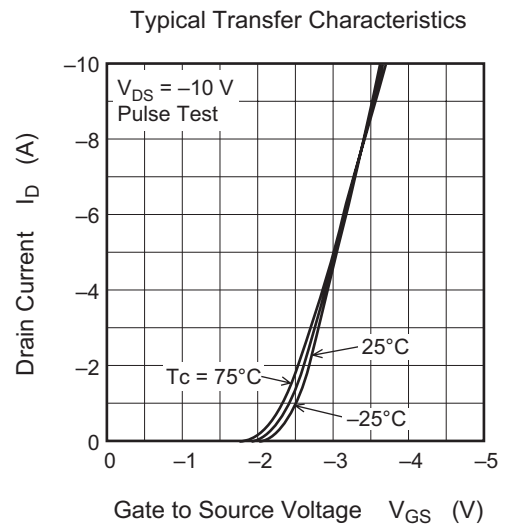
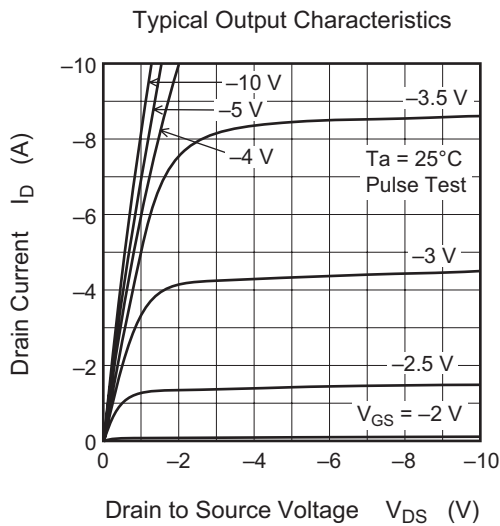
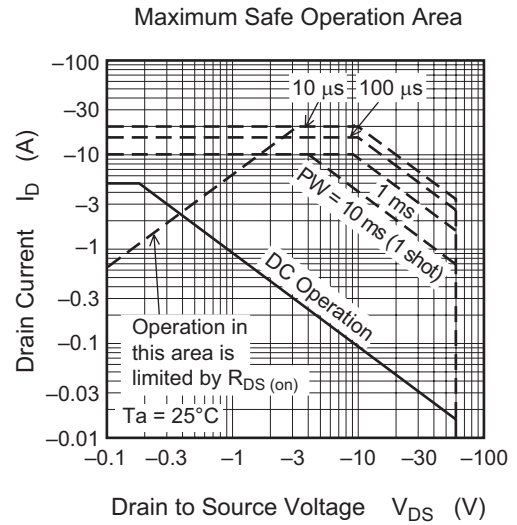
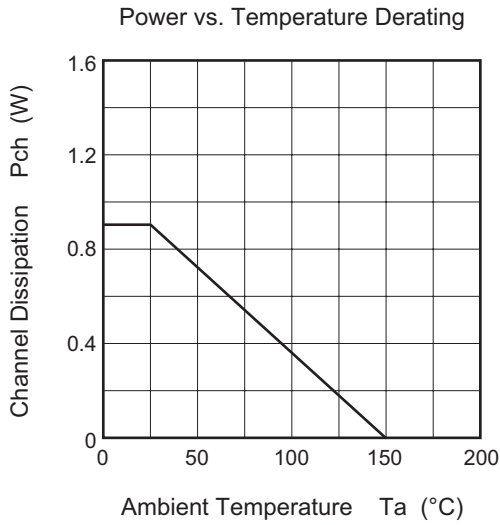
Electrical Characteristics

(Ta = 25°C)

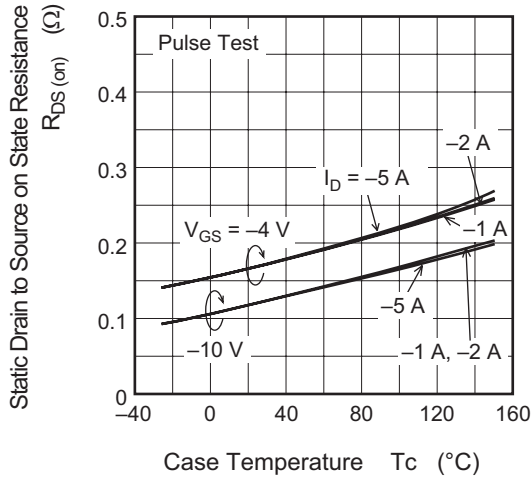
Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	V _{(BR) DSS}	-60	—	—	V	I _D = -10 mA, V _{GS} = 0
Gate to source breakdown voltage	V _{(BR) GSS}	±20	—	—	V	I _G = ±100 μA, V _{DS} = 0
Zero gate voltage drain current	I _{DSS}	—	—	-10	μA	V _{DS} = -60 V, V _{GS} = 0
Gate to source leak current	I _{GSS}	—	—	±10	μA	V _{GS} = ±16 V, V _{DS} = 0
Gate to source cutoff voltage	V _{GS (off)}	-1.0	—	-2.0	V	I _D = -1 mA, V _{DS} = -5 V
Static drain to source on state resistance	R _{DS (on)}	—	0.12	0.16	Ω	I _D = -2.5 A, V _{GS} = -10 V ^{Note 4}
	R _{DS (on)}	—	0.17	0.24	Ω	I _D = -2.5 A, V _{GS} = -4 V ^{Note 4}
Forward transfer admittance	y _{fs}	3	5	—	S	I _D = -2.5 A, V _{DS} = -10 V ^{Note 4}
Input capacitance	C _{iss}	—	600	—	pF	V _{DS} = -10 V
Output capacitance	C _{oss}	—	290	—	pF	V _{GS} = 0
Reverse transfer capacitance	C _{rss}	—	80	—	pF	f = 1 MHz
Turn-on delay time	t _{d (on)}	—	10	—	ns	V _{GS} = -10 V
Rise time	t _r	—	25	—	ns	I _D = -2.5 A
Turn-off delay time	t _{d (off)}	—	95	—	ns	R _L = 12 Ω
Fall time	t _f	—	55	—	ns	
Body to drain diode forward voltage	V _{DF}	—	-1.0	—	V	I _F = -5 A, V _{GS} = 0
Body to drain diode reverse recovery time	t _{rr}	—	65	—	ns	I _F = -5 A, V _{GS} = 0 di _F /dt = 50 A/μs

Note: 4. Pulse test

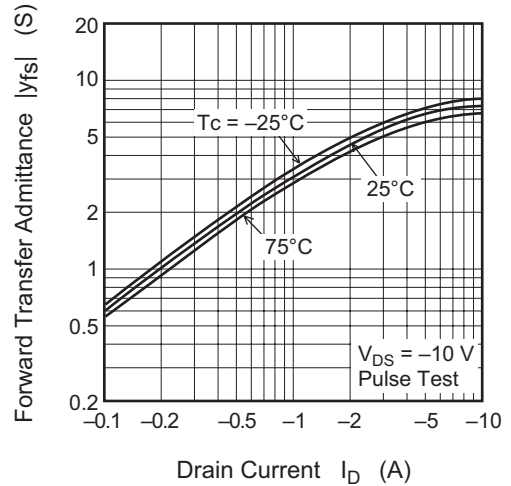
Main Characteristics



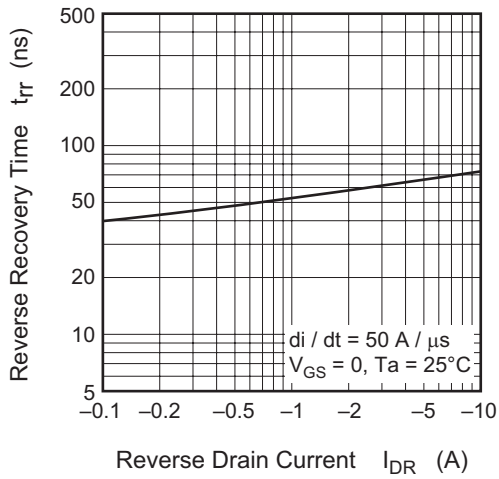
Static Drain to Source on State Resistance vs. Temperature



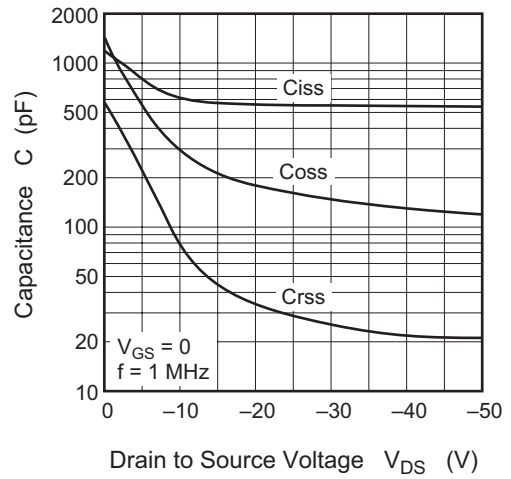
Forward Transfer Admittance vs. Drain Current



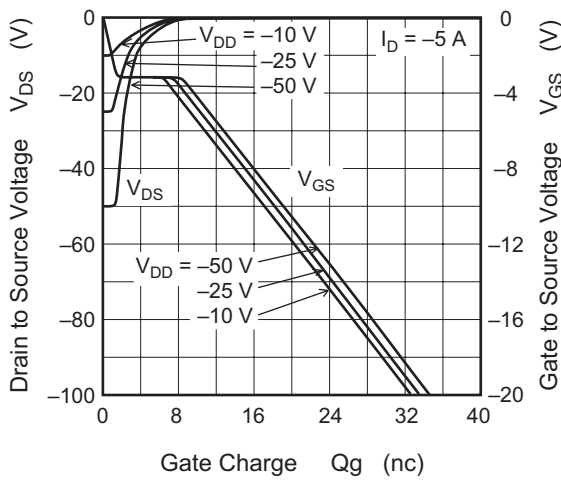
Body-Drain Diode Reverse Recovery Time



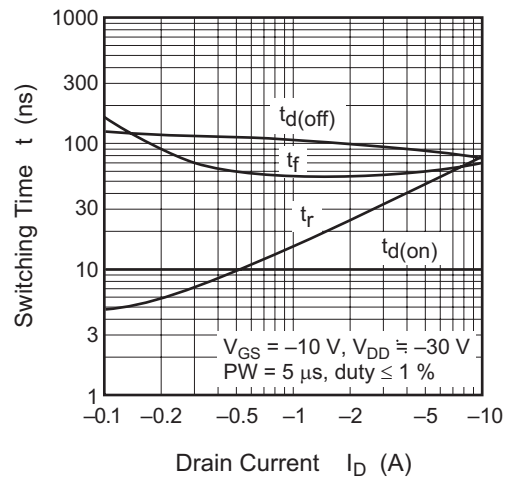
Typical Capacitance vs. Drain to Source Voltage

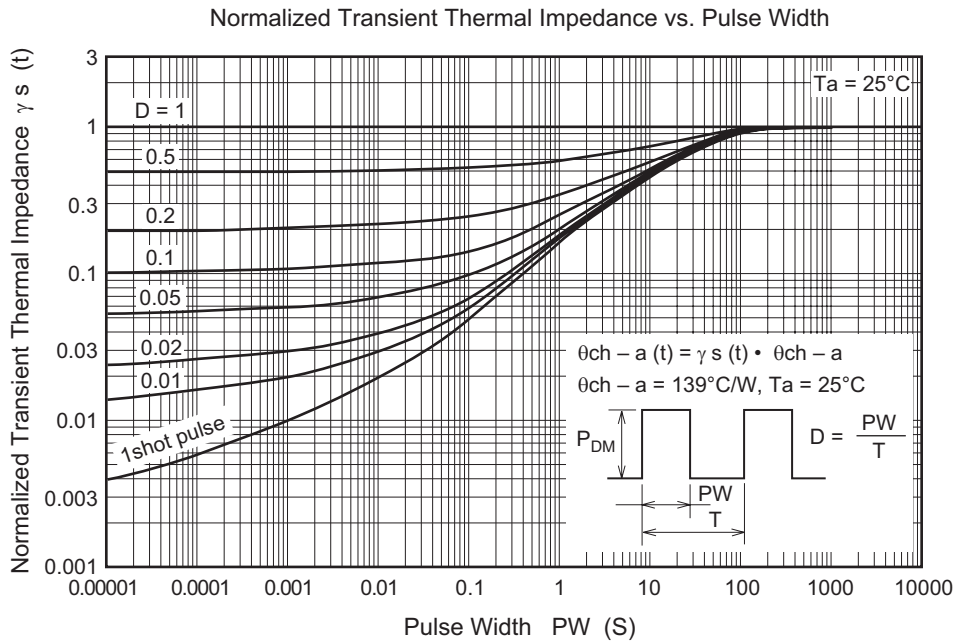
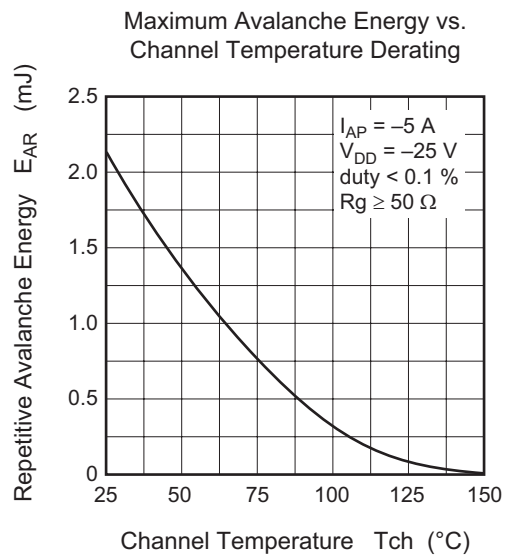
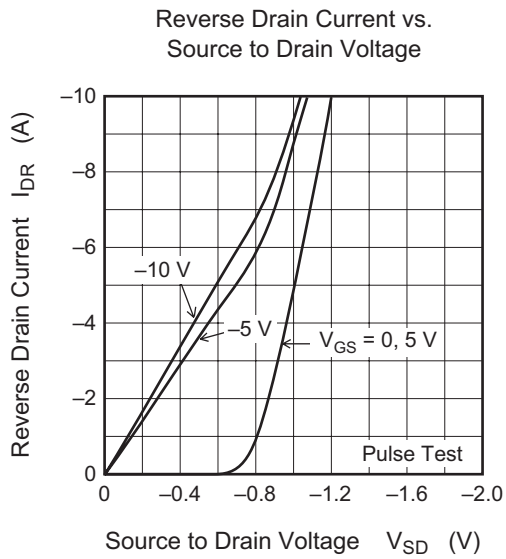


Dynamic Input Characteristics

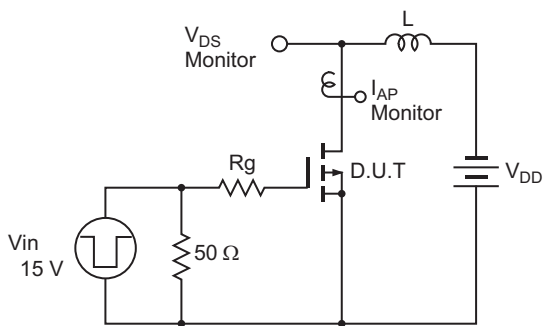


Switching Characteristics



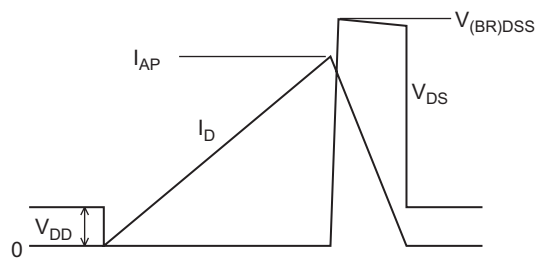


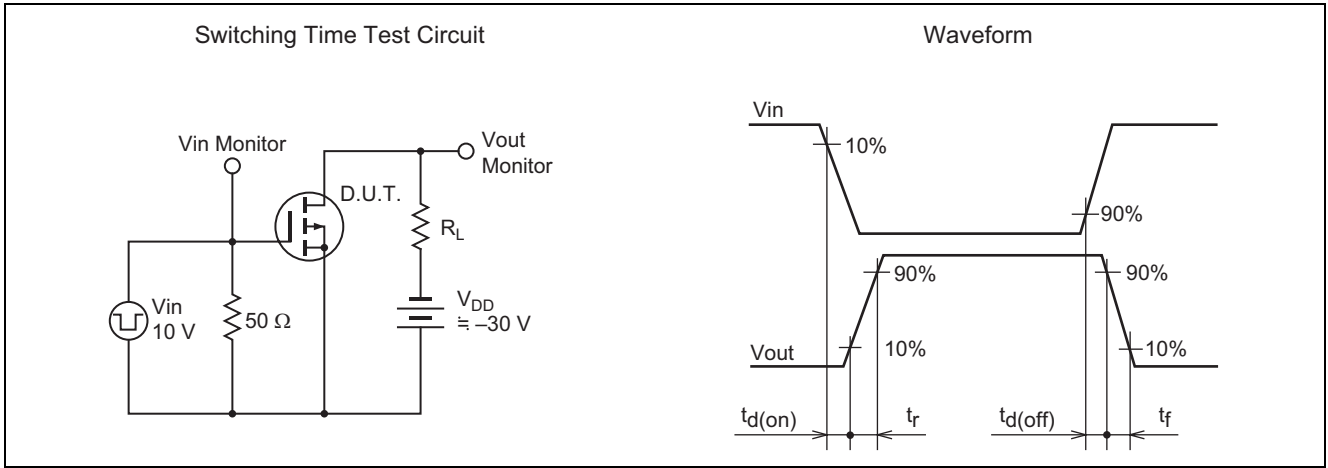
Avalanche Test Circuit



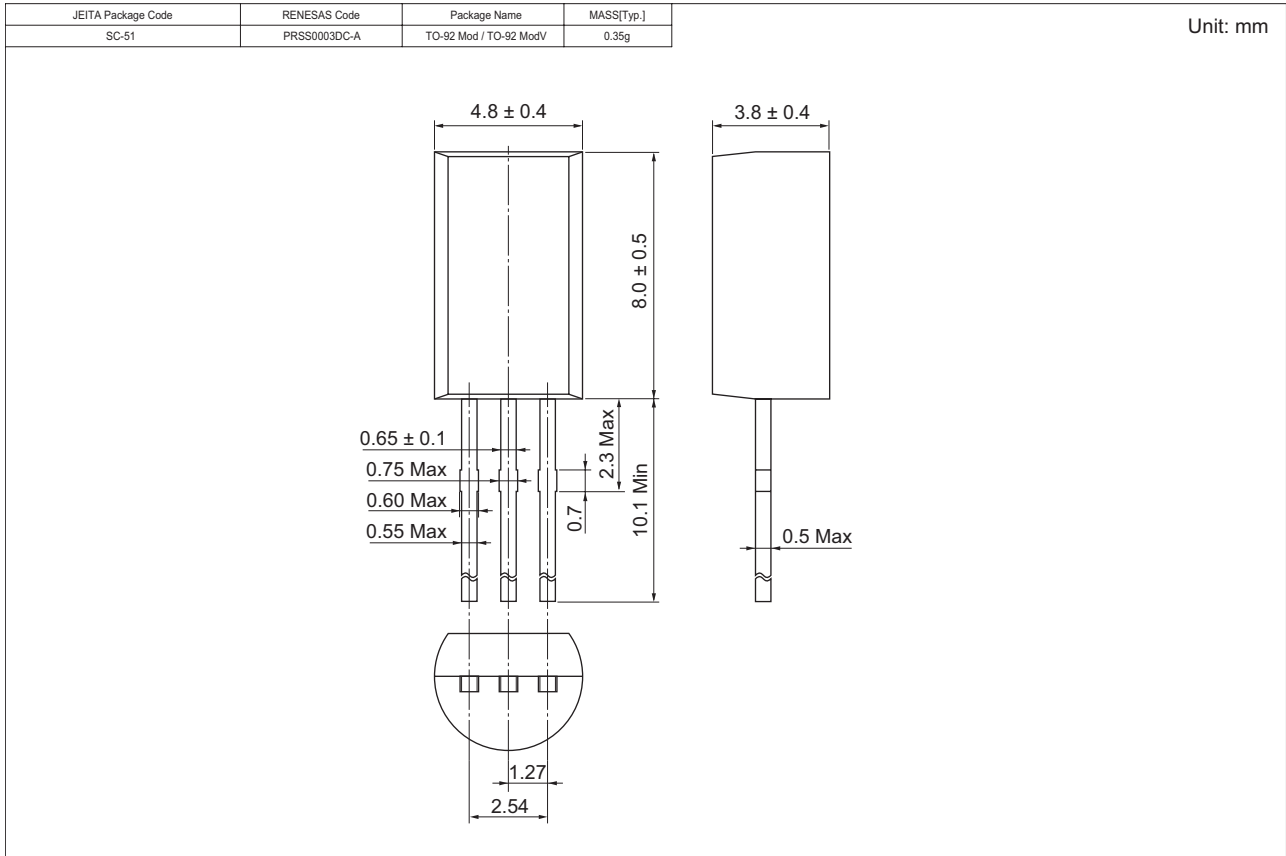
Avalanche Waveform

$$E_{AR} = \frac{1}{2} \cdot L \cdot I_{AP}^2 \cdot \frac{V_{DSS}}{V_{DSS} - V_{DD}}$$





Package Dimensions



Ordering Information

Part Name	Quantity	Shipping Container
2SJ496TZ-E	2500 pcs	Taping

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