

RJK1525DPJ, RJK1525DPE, RJK1525DPF

Silicon N Channel MOS FET
High Speed Power Switching

REJ03G0623-0100

Rev.1.00

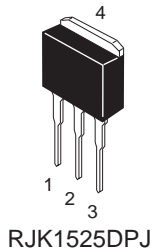
Apr.22,2005

Features

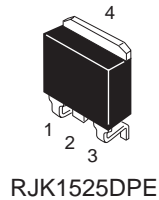
- Low on-resistance
- Low leakage current
- High speed switching

Outline

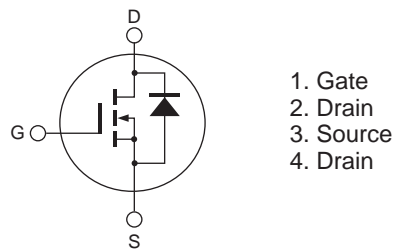
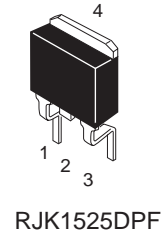
RENESAS Package code: PRSS0004AE-A
(Package name LDKPAK(L))



RENESAS Package code: PRSS0004AE-B
(Package name LDKPAK(S)-(1))



RENESAS Package code: PRSS0004AE-C
(Package name LDKPAK(S)-(2))



1. Gate
2. Drain
3. Source
4. Drain

Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Ratings	Unit
Drain to Source voltage	V _{DSS}	150	V
Gate to Source voltage	V _{GSS}	±30	V
Drain current	I _D	25	A
Drain peak current	I _{D (pulse)} ^{Note1}	50	A
Body-Drain diode reverse Drain current	I _{DR}	25	A
Body-Drain diode reverse Drain peak current	I _{DR (pulse)} ^{Note1}	50	A
Avalanche current	I _{AP} ^{Note3}	17	A
Avalanche energy	E _{AR} ^{Note3}	21.6	mJ
Channel dissipation	P _{ch} ^{Note2}	75	W
Channel to case thermal impedance	θ _{ch-c}	1.67	°C/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. ST_{ch} = 25°C, T_{ch} ≤ 150°C

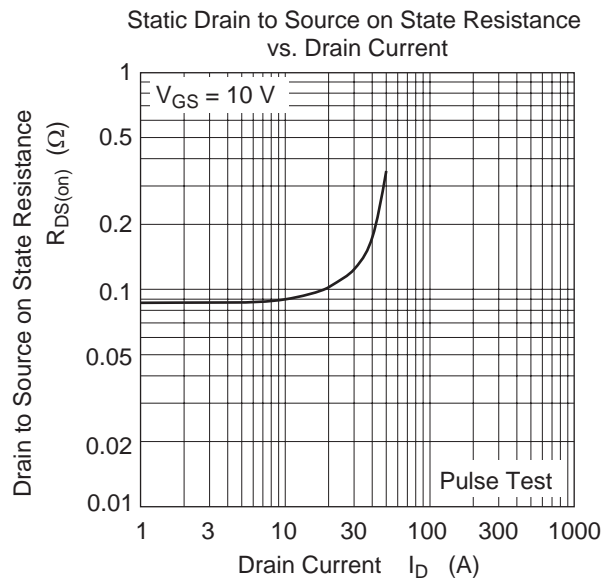
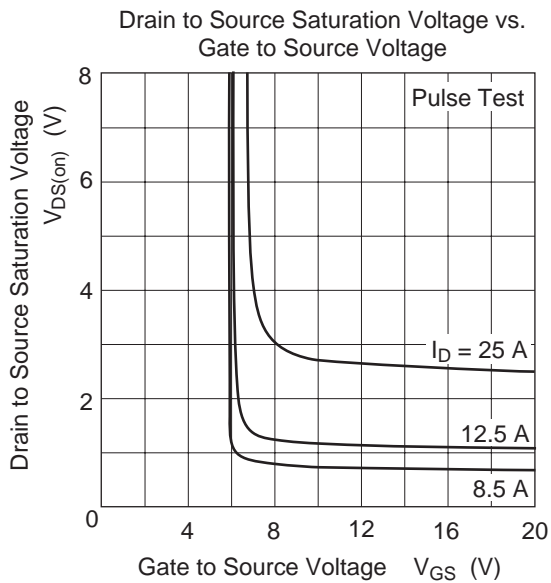
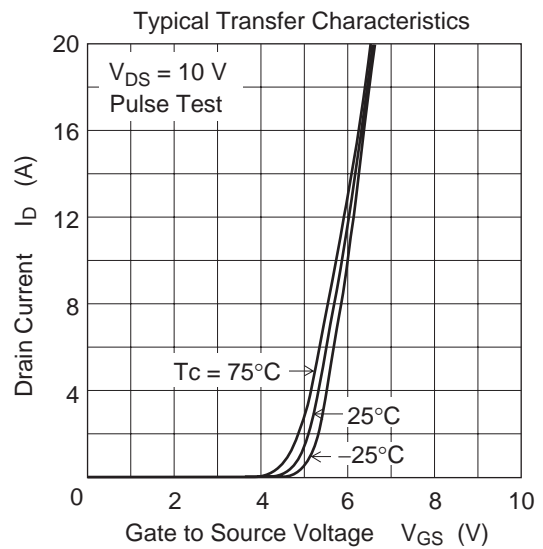
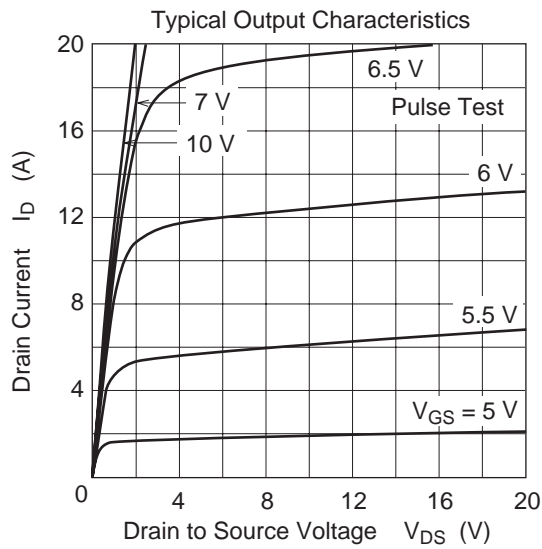
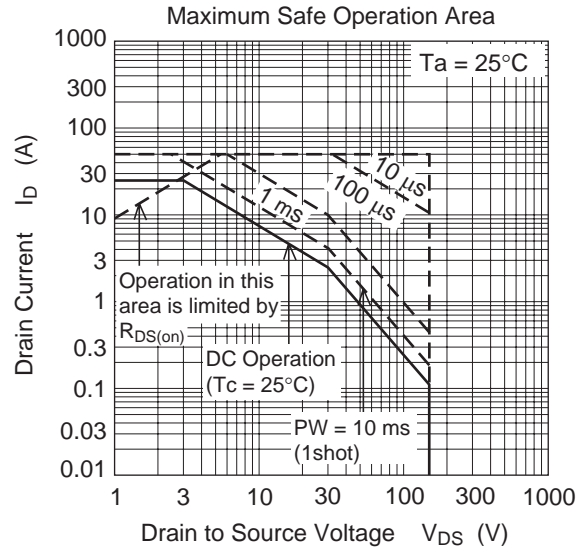
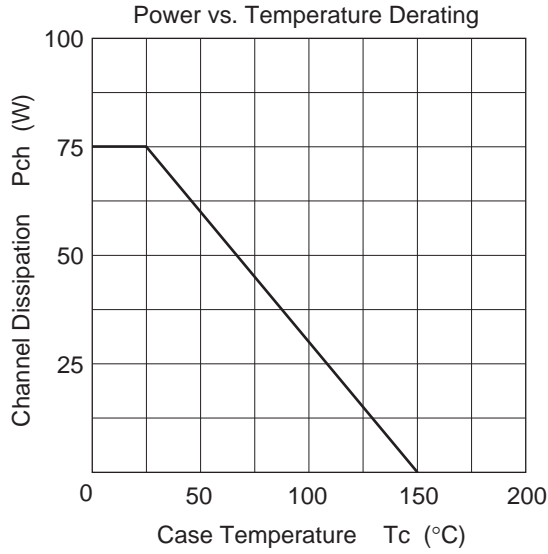
Electrical Characteristics

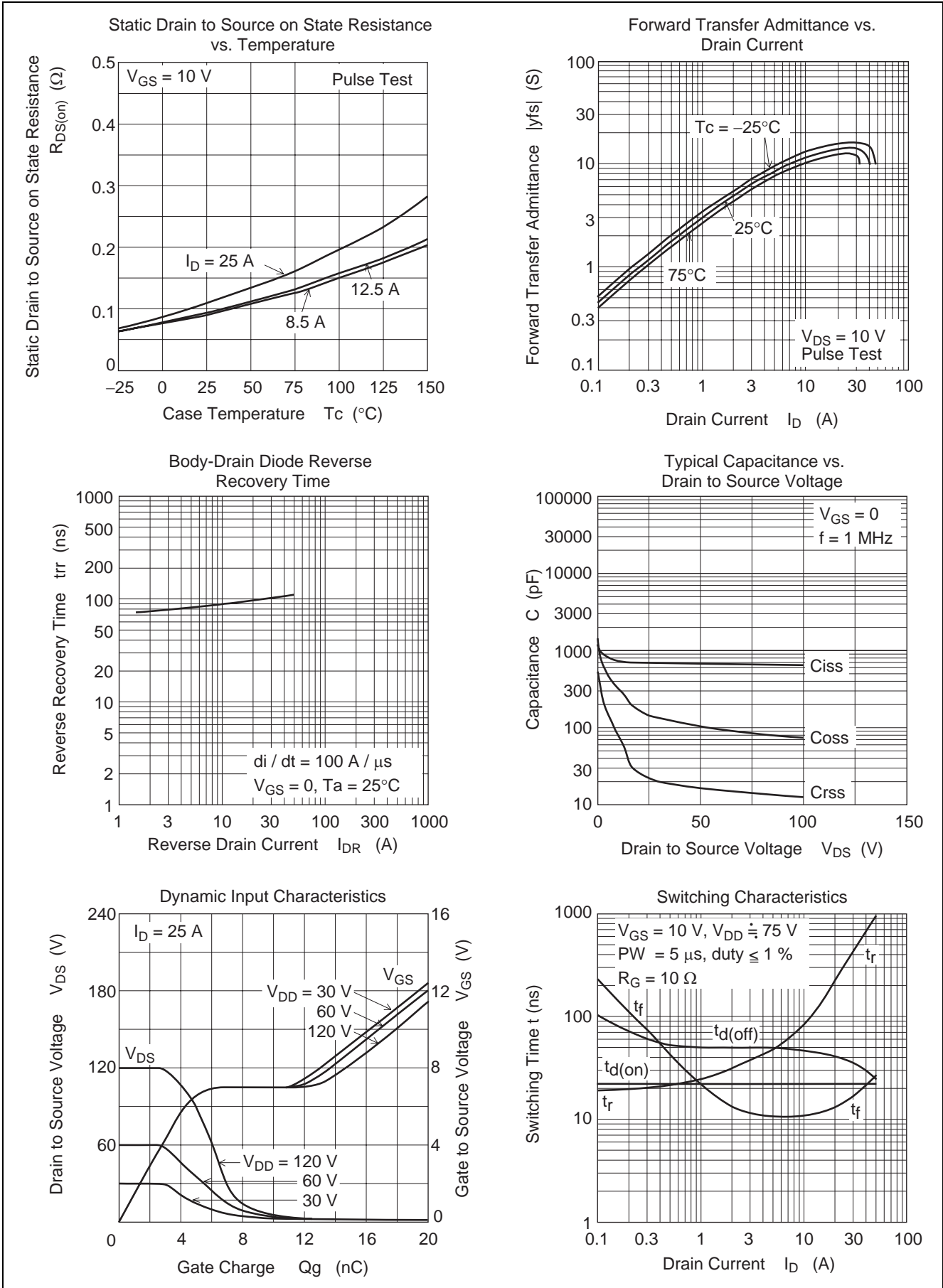
(Ta = 25°C)

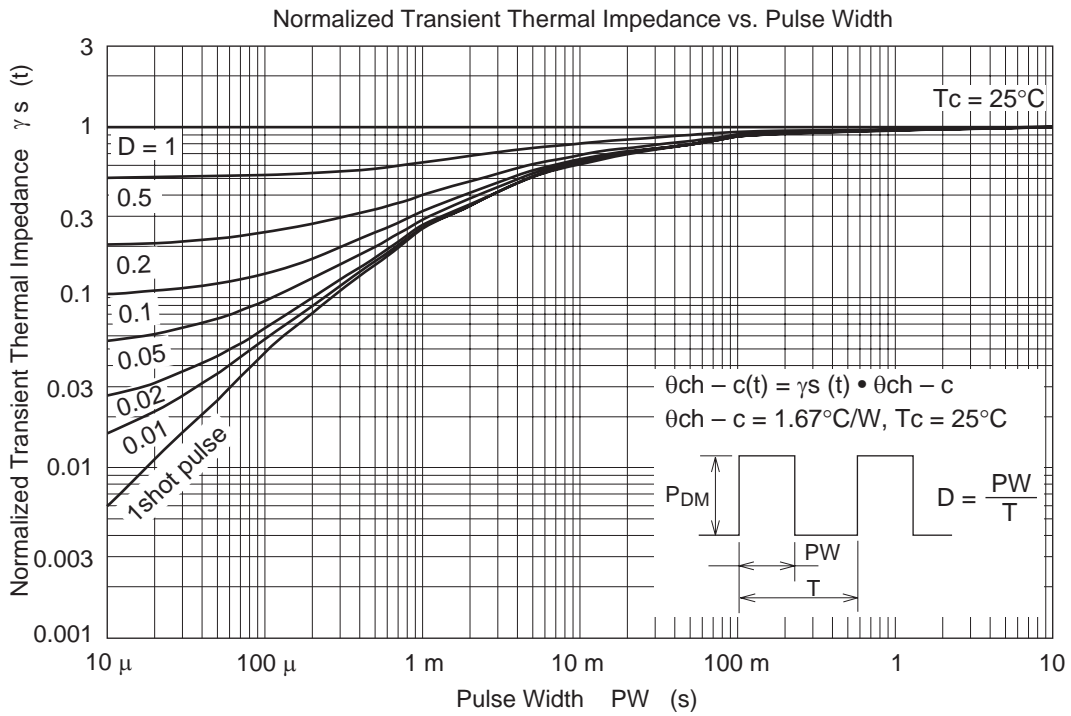
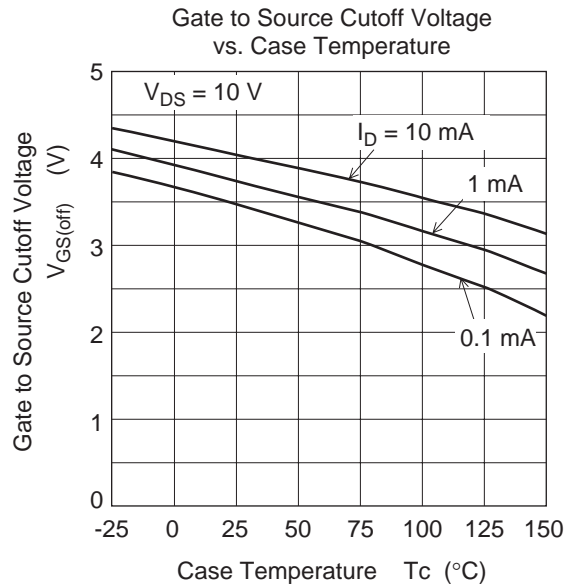
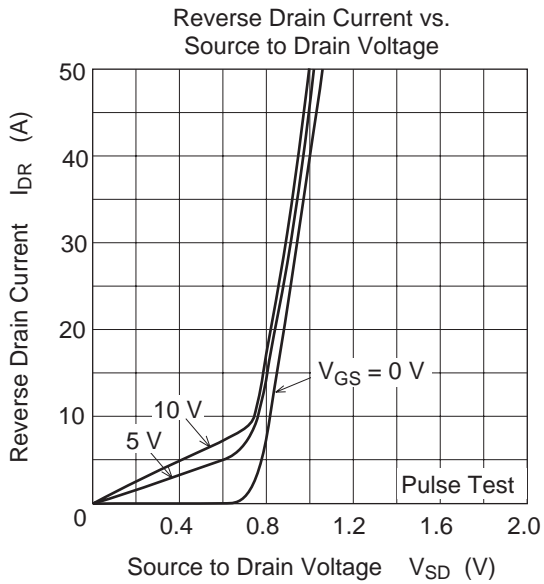
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Drain to Source breakdown voltage	V _{(BR)DSS}	150	—	—	V	I _D = 10 mA, V _{GS} = 0
Zero Gate voltage drain current	I _{DSS}	—	—	1	μA	V _{DS} = 150 V, V _{GS} = 0
Gate to Source leak current	I _{GSS}	—	—	±0.1	μA	V _{GS} = ±30 V, V _{DS} = 0
Gate to Source cutoff voltage	V _{GS(off)}	3.0	—	4.5	V	V _{DS} = 10 V, I _D = 1 mA
Forward transfer admittance	y _{fs}	7	12	—	S	I _D = 12.5 A, V _{DS} = 10 V ^{Note4}
Static Drain to Source on state resistance	R _{DS(on)}	—	0.093	0.110	Ω	I _D = 12.5 A, V _{GS} = 10 V ^{Note4}
Input capacitance	C _{iss}	—	680	—	pF	V _{DS} = 25 V V _{GS} = 0 f = 1 MHz
Output capacitance	C _{oss}	—	150	—	pF	
Reverse transfer capacitance	C _{rss}	—	22	—	pF	
Turn-on delay time	td(on)	—	22	—	ns	I _D = 12.5 A V _{GS} = 10 V R _L = 6 Ω R _g = 10 Ω
Rise time	tr	—	110	—	ns	
Turn-off delay time	td(off)	—	45	—	ns	
Fall time	tf	—	12	—	ns	
Total Gate charge	Q _g	—	18	—	nC	V _{DD} = 120 V V _{GS} = 10 V I _D = 25 A
Gate to Source charge	Q _{gs}	—	4.5	—	nC	
Gate to Drain charge	Q _{gd}	—	9	—	nC	
Body-Drain diode forward voltage	V _{DF}	—	0.95	1.50	V	I _F = 25 A, V _{GS} = 0 ^{Note4}
Body-Drain diode reverse recovery time	trr	—	100	—	ns	I _F = 25 A, V _{GS} = 0 diF/dt = 100 A/μs
Body-Drain diode reverse recovery charge	Q _{rr}	—	0.4	—	μC	

- Notes: 4. Pulse test

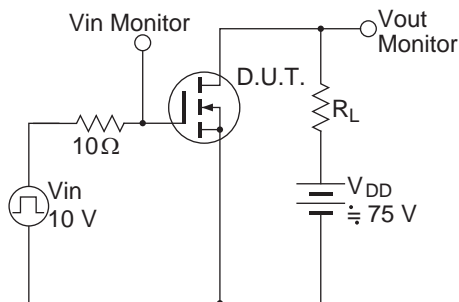
Main Characteristics



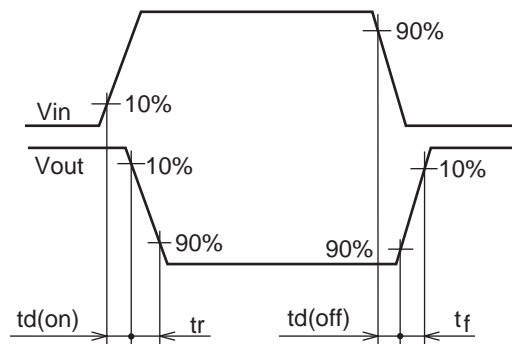




Switching Time Test Circuit

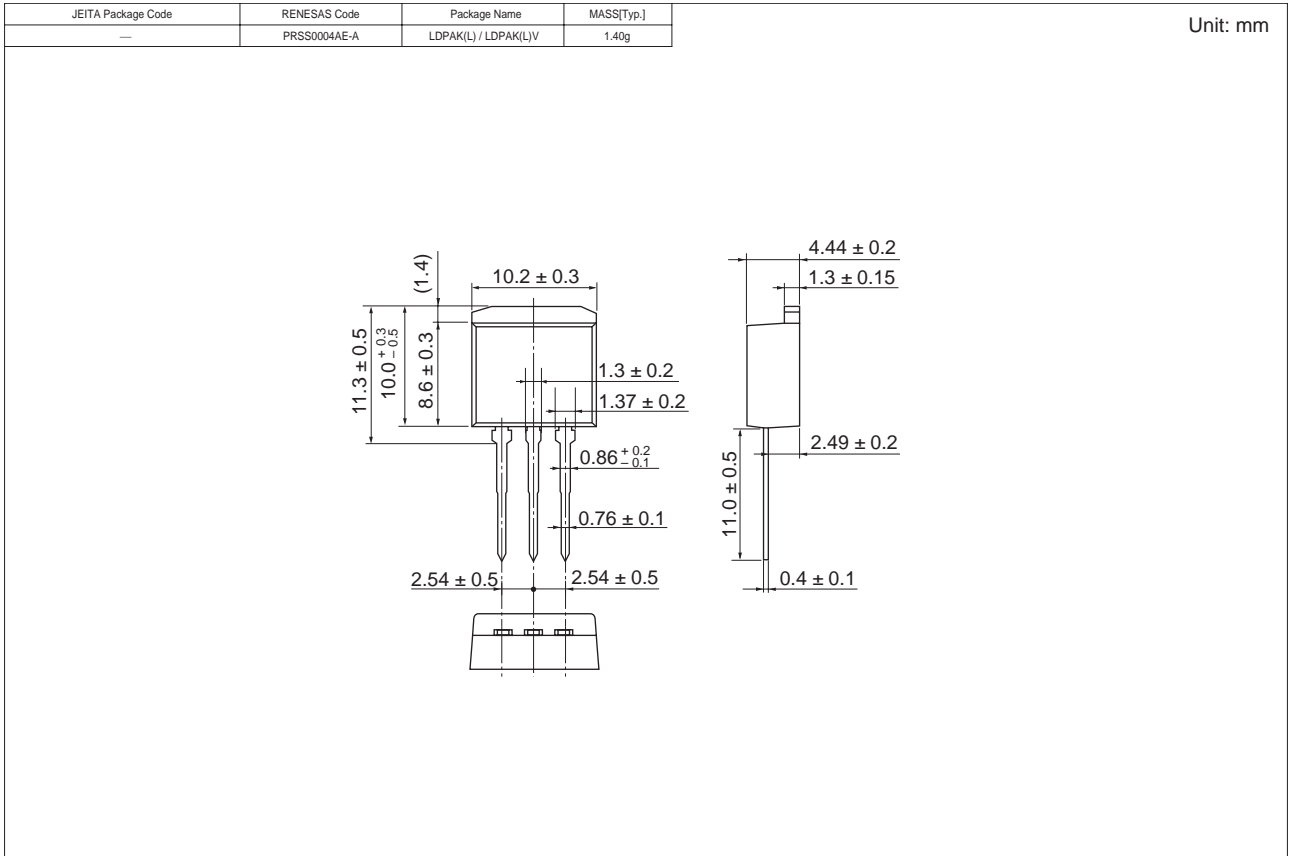


Waveform

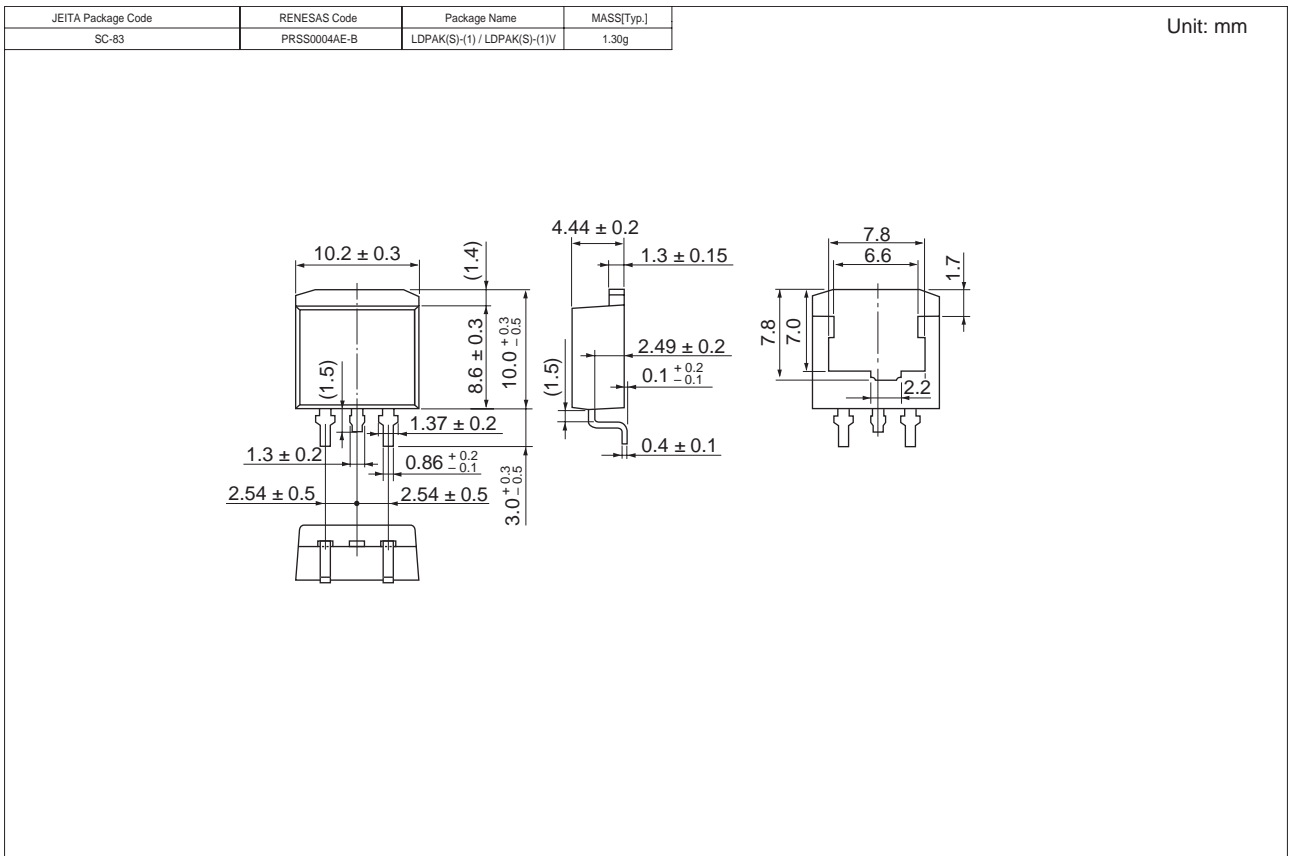


Package Dimensions

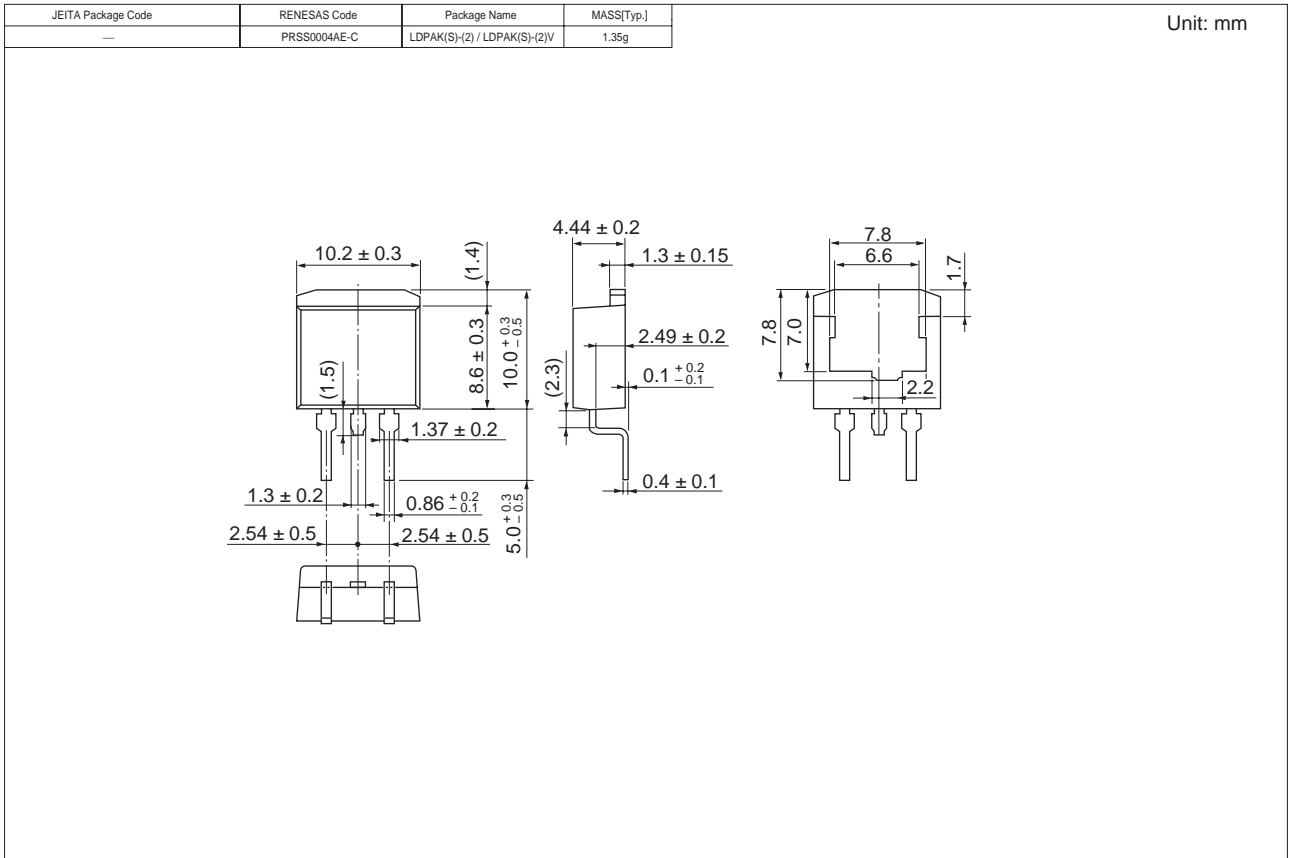
• RJK1525DPJ



• RJK1525DPE



• RJK1525DPF



Ordering Information

Part Name	Quantity	Shipping Container
RJK1525DPE-LE	1000 pcs	Taping

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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