

2SK2730

Silicon N Channel MOS FET
High Speed Power Switching

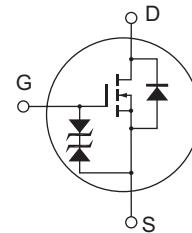
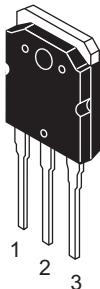
REJ03G1028-0300
(Previous: ADE-208-493A)
Rev.3.00
Sep 07, 2005

Features

- Low on-resistance
- High speed switching
- Low drive current
- Avalanche ratings

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 _{DSS}	500	V
Gate to source voltage	V _{GSS}	±30	V
Drain current	I _D	25	A
Drain peak current	I _{D(pulse)} ^{*1}	100	A
Body to drain diode reverse drain current	I _{DR}	25	A
Avalanche current	I _{AP} ^{*3}	25	A
Avalanche energy	E _{AR} ^{*3}	35	mJ
Channel dissipation	P _{ch} ^{*2}	175	W
Channel temperature	T _{ch}	150	°C
Storage temperature	T _{stg}	-55 to +150	°C

Notes: 1. PW ≤ 10μs, duty cycle ≤ 1 %

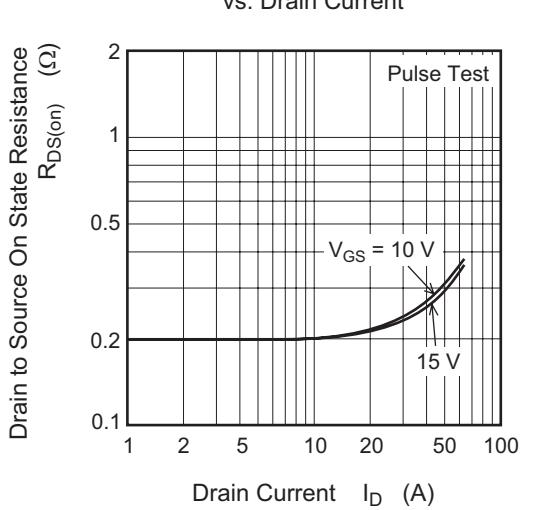
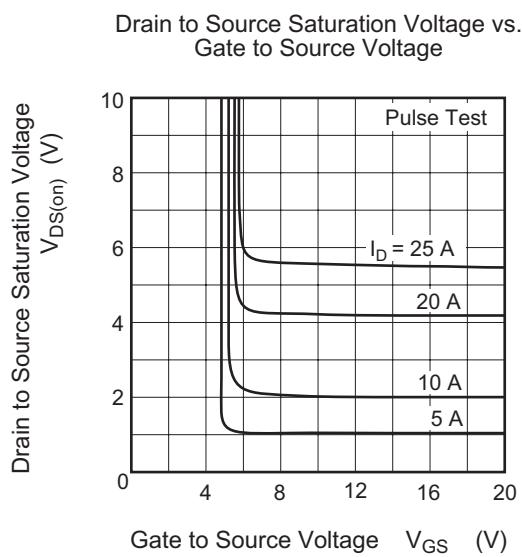
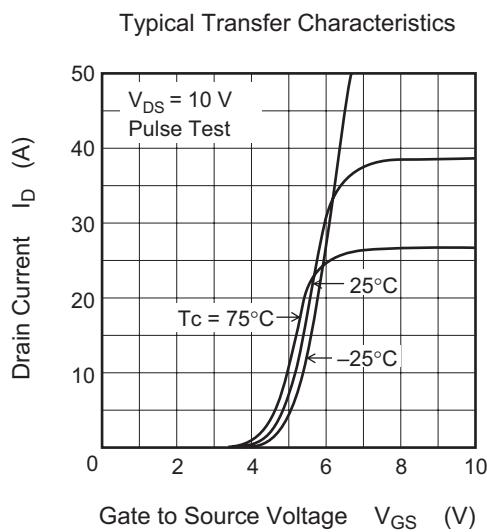
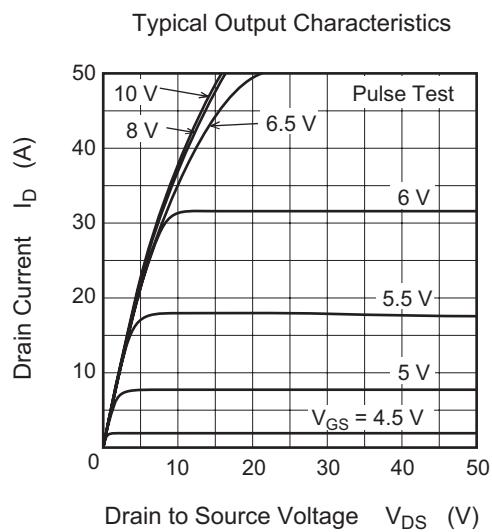
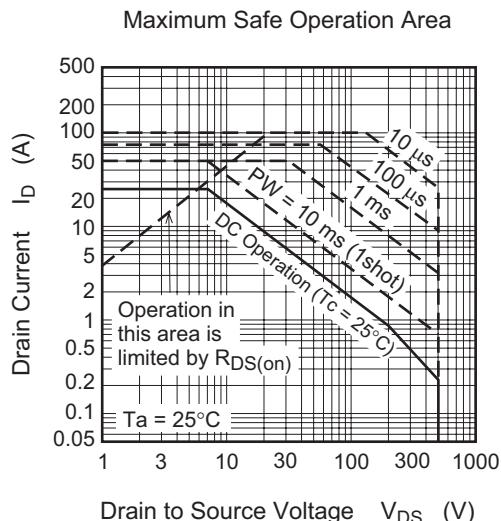
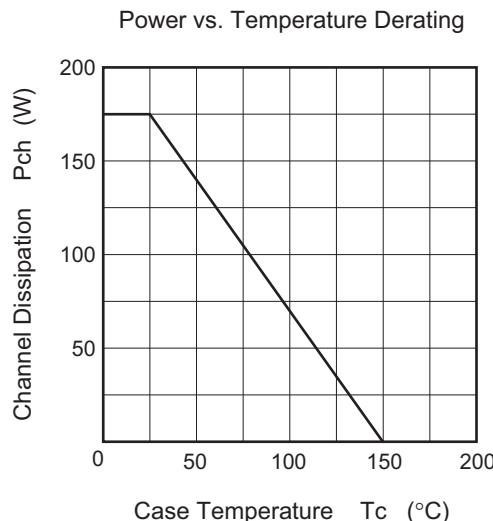
2. Value at T_c = 25°C3. Value at T_{ch} = 25°C, R_g ≥ 50 Ω**Electrical Characteristics**

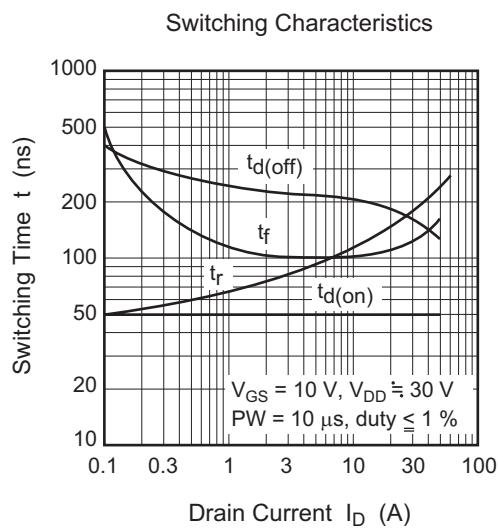
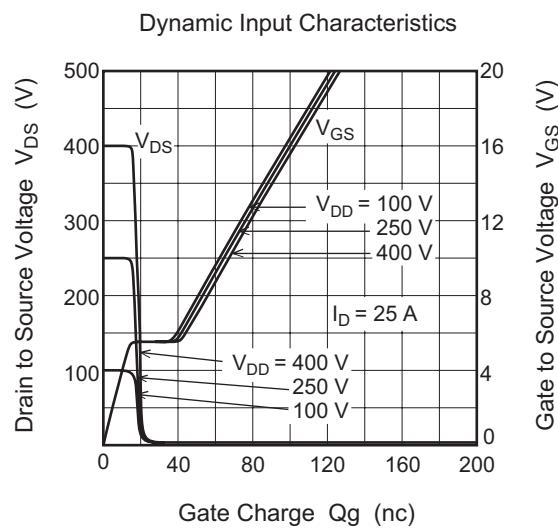
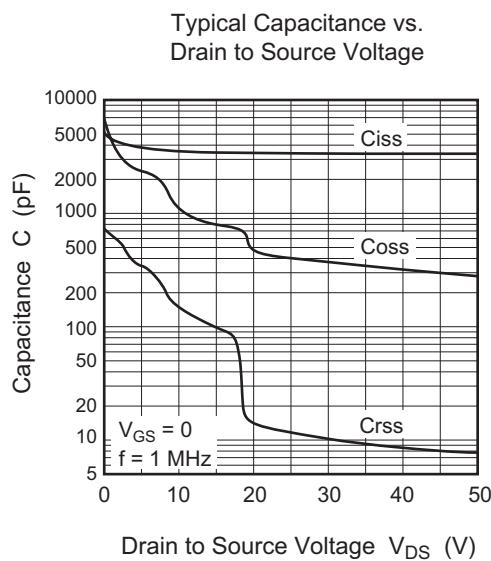
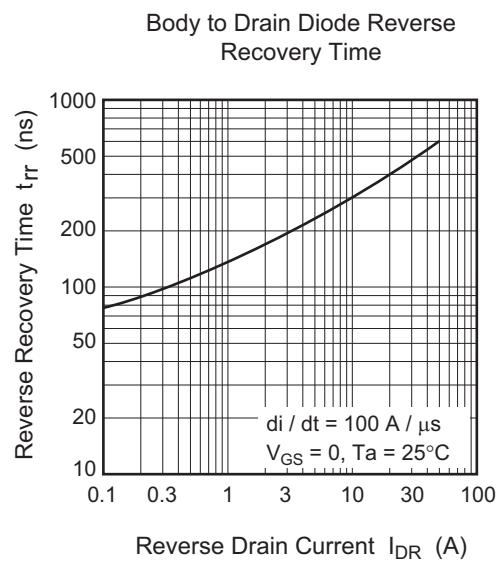
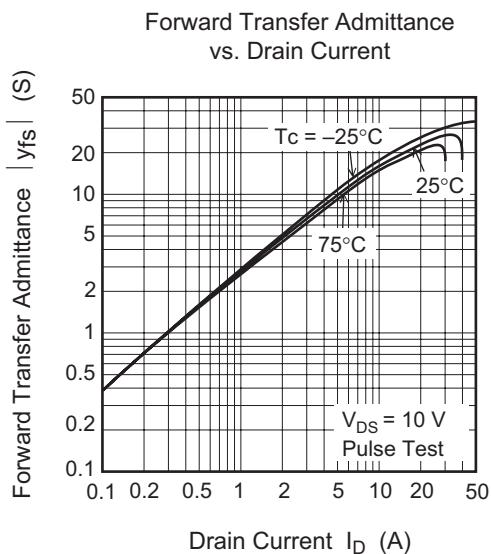
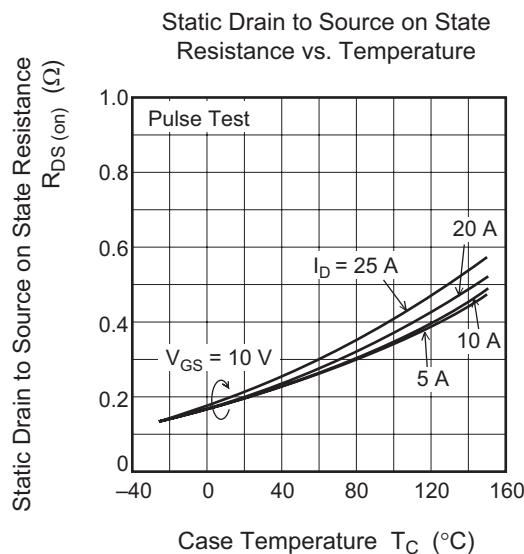
(Ta = 25°C)

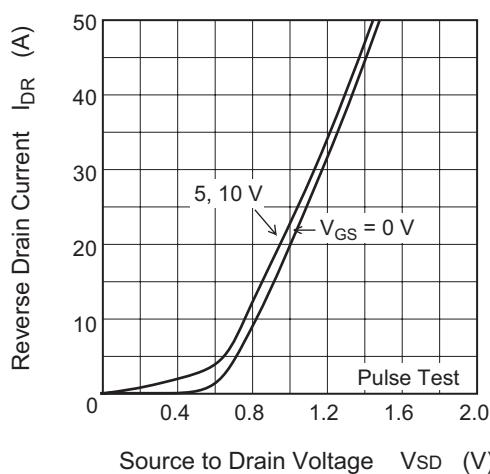
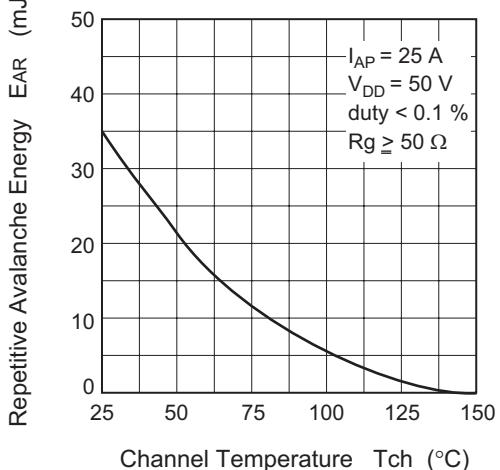
Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	V _{(BR)DSS}	500	—	—	V	I _D = 10 mA, V _{GS} = 0
Gate to source breakdown voltage	V _{(BR)GSS}	±30	—	—	V	I _G = ±100 μA, V _{DS} = 0
Gate to source leak current	I _{GSS}	—	—	±10	μA	V _{GS} = ±25 V, V _{DS} = 0
Zero gate voltage drain current	I _{DSS}	—	—	10	μA	V _{DS} = 500 V, V _{GS} = 0
Gate to source cutoff voltage	V _{GS(off)}	2.5	—	3.5	V	I _D = 1 mA, V _{DS} = 10 V ^{*4}
Static drain to source on state resistance	R _{DS(on)}	—	0.2	0.24	Ω	I _D = 15 A, V _{GS} = 10 V ^{*4}
Forward transfer admittance	y _{fs}	12	20	—	S	I _D = 15 A, V _{DS} = 10 V ^{*4}
Input capacitance	C _{iss}	—	3500	—	pF	V _{DS} = 10 V, V _{GS} = 0, f = 1 MHz
Output capacitance	C _{oss}	—	1000	—	pF	
Reverse transfer capacitance	C _{rss}	—	150	—	pF	
Total gate charge	Q _g	—	65	—	nc	V _{DD} = 400 V, V _{GS} = 10 V, I _D = 25 A
Gate to source charge	Q _{gs}	—	16	—	nc	
Gate to drain charge	Q _{gd}	—	24	—	nc	
Turn-on delay time	t _{d(on)}	—	50	—	ns	V _{GS} = 10 V, I _D = 15 A, R _L = 2 Ω
Rise time	t _r	—	140	—	ns	
Turn-off delay time	t _{d(off)}	—	200	—	ns	
Fall time	t _f	—	110	—	ns	
Body to drain diode forward voltage	V _{DF}	—	1.1	—	V	I _D = 25 A, V _{GS} = 0
Body to drain diode reverse recovery time	t _{rr}	—	450	—	ns	I _F = 25 A, V _{GS} = 0 dI _F / dt = 100A/ μs

Note: 4. Pulse test

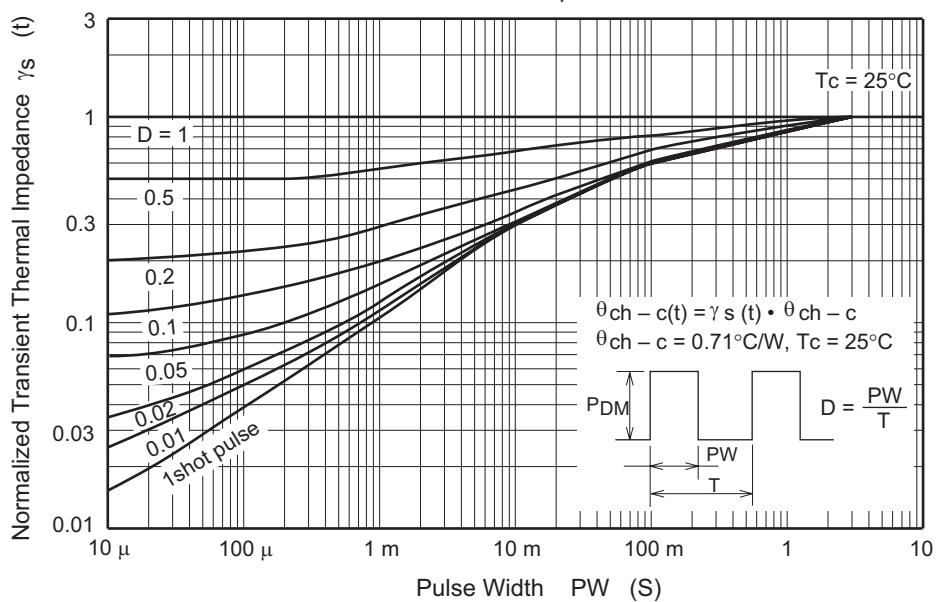
Main Characteristics



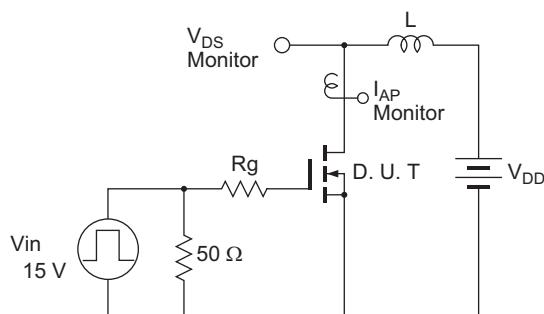


Reverse Drain Current vs.
Source to Drain VoltageMaximum Avalanche Energy vs.
Channel Temperature Derating

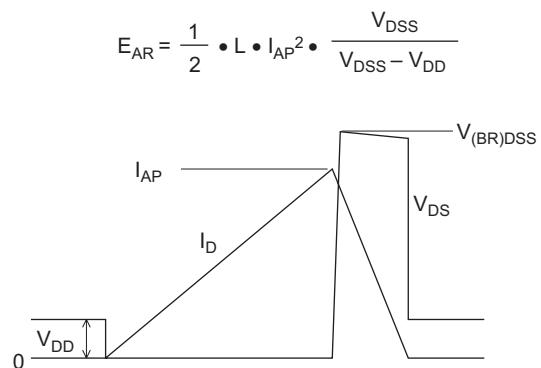
Normalized Transient Thermal Impedance vs. Pulse Width

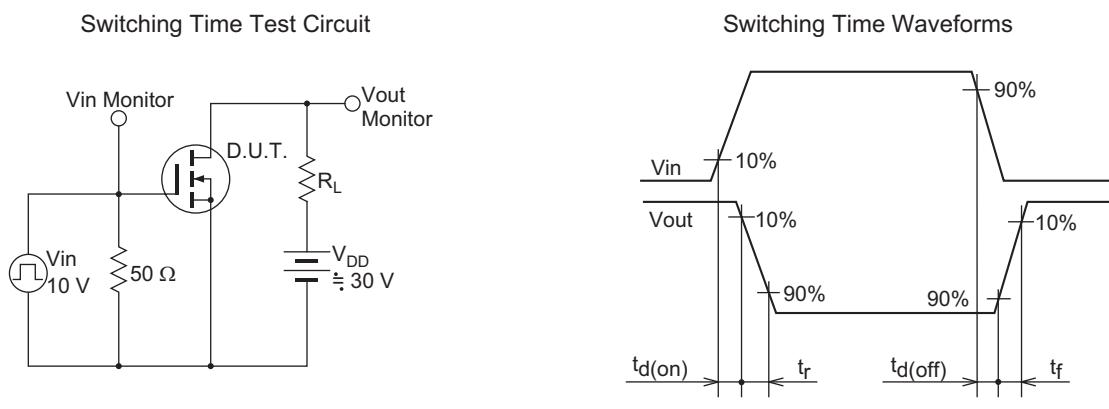


Avalanche Test Circuit

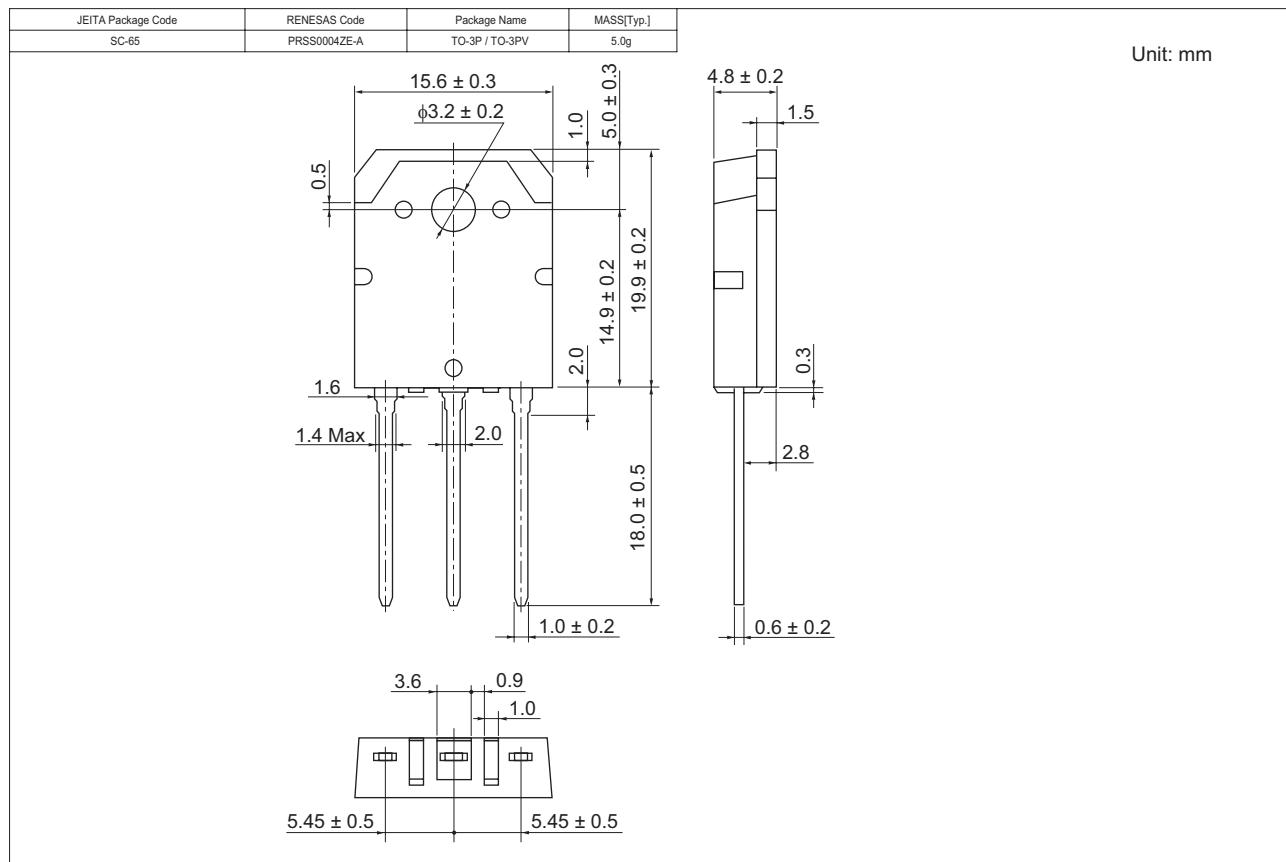


Avalanche Waveform





Package Dimensions



Ordering Information

Part Name	Quantity	Shipping Container
2SK2730-E	360 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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