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Renesas Electronics website: <http://www.renesas.com>

April 1st, 2010
Renesas Electronics Corporation

Issued by: Renesas Electronics Corporation (<http://www.renesas.com>)

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EOL announced Product

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2SK1526, 2SK1527

Silicon N Channel MOS FET

REJ03G0950-0300
Rev.3.00
May 13, 2009

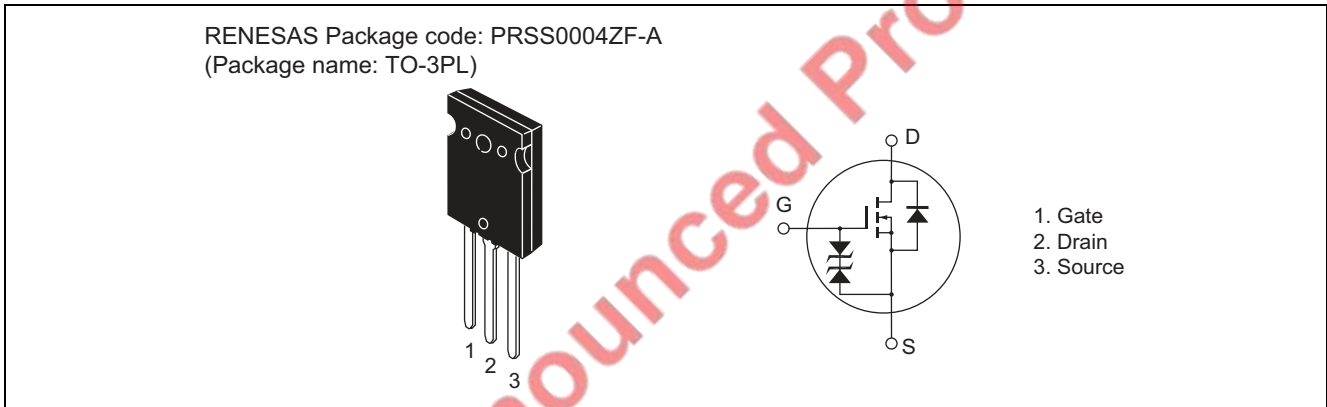
Application

High speed power switching

Features

- Low on-resistance
- High speed switching
- Low drive current
- No secondary breakdown
- Suitable for switching regulator and DC-DC converter

Outline



Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Ratings	Unit	
Drain to source voltage	V_{DSS}	2SK1526	450	V
		2SK1527	500	
Gate to source voltage	V_{GSS}	± 30	V	
Drain current	I_D	40	A	
Drain peak current	$I_{D(pulse)}^{*1}$	160	A	
Body to drain diode reverse drain current	I_{DR}	40	A	
Channel dissipation	P_{ch}^{*2}	250	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 $T_C = 25^\circ C$

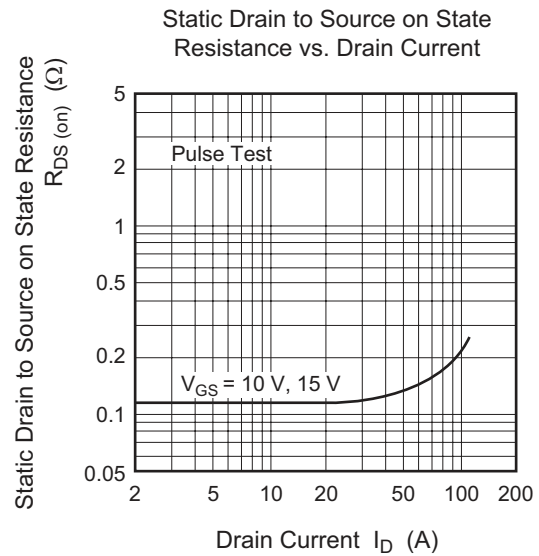
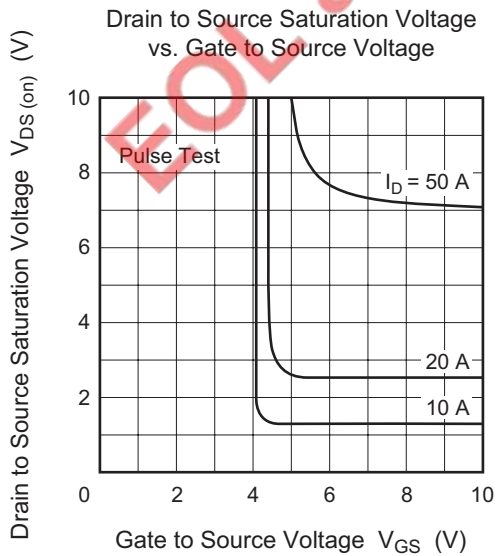
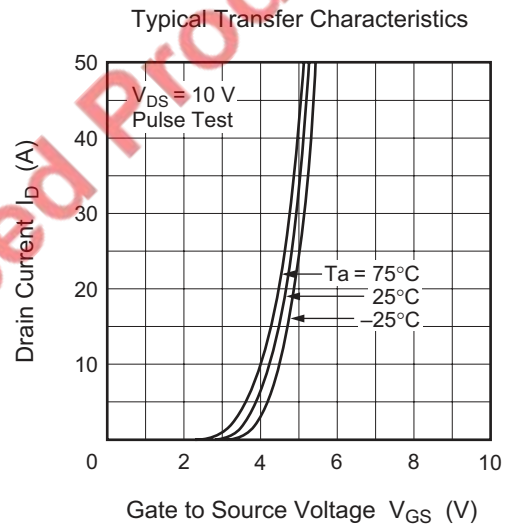
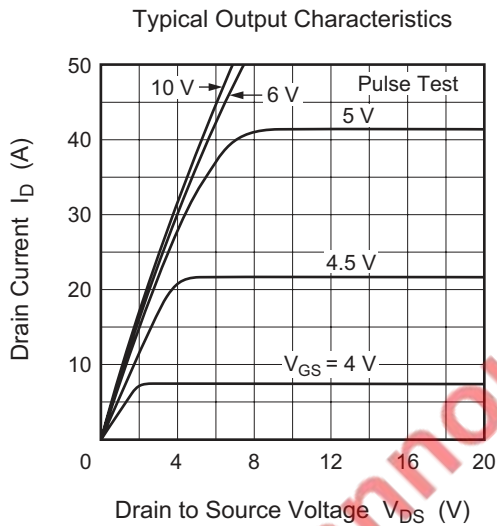
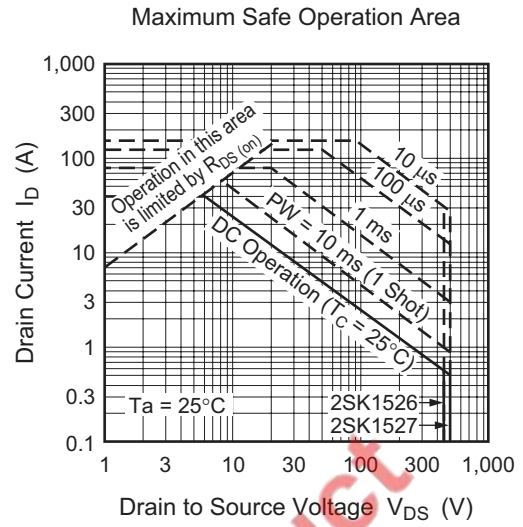
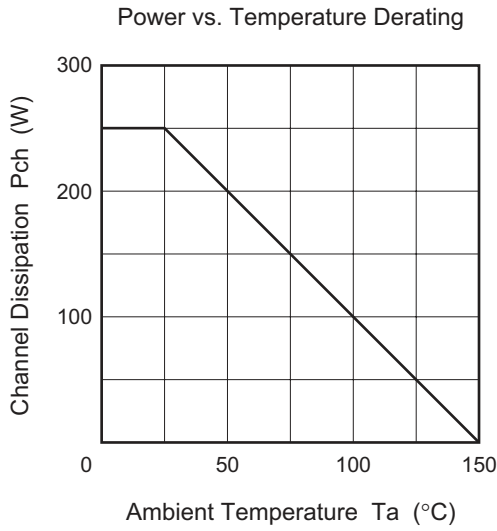
Electrical Characteristics

(Ta = 25°C)

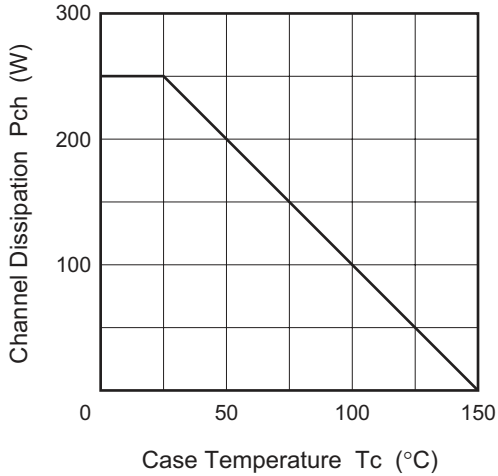
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Drain to source breakdown voltage	2SK1526	450	—	—	V	I _D = 10 mA, V _{GS} = 0
	2SK1527	500	—	—		
Gate to source breakdown voltage	V _{(BR)GSS}	±30	—	—	V	I _G = ±100 ∞A, V _{DS} = 0
Gate to source leak current	I _{GSS}	—	—	±10	∞A	V _{GS} = ±25 V, V _{DS} = 0
Zero gate voltage drain current	2SK1526	—	—	250	∞A	V _{DS} = 360 V, V _{GS} = 0
	2SK1527					V _{DS} = 400 V, V _{GS} = 0
Gate to source cutoff voltage	V _{GS(off)}	2.0	—	3.0	V	I _D = 1 mA, V _{DS} = 10 V
Static drain to source on state resistance	2SK1526	—	0.11	0.15	Ω	I _D = 20 A, V _{GS} = 10 V *3
	2SK1527		—	0.12		
Forward transfer admittance	y _{fs}	20	30	—	S	I _D = 20 A, V _{DS} = 10 V *3
Input capacitance	C _{iss}	—	5800	—	pF	V _{DS} = 10 V, V _{GS} = 0, f = 1 MHz
Output capacitance	C _{oss}	—	1430	—	pF	
Reverse transfer capacitance	C _{rss}	—	150	—	pF	
Turn-on delay time	t _{d(on)}	—	60	—	ns	I _D = 20 A, V _{GS} = 10 V, R _L = 1.5 Ω
Rise time	t _r	—	175	—	ns	
Turn-off delay time	t _{d(off)}	—	420	—	ns	
Fall time	t _f	—	160	—	ns	
Body to drain diode forward voltage	V _{DF}	—	1.2	—	V	I _F = 40 A, V _{GS} = 0
Body to drain diode reverse recovery time	t _{rr}	—	600	—	ns	I _F = 40 A, V _{GS} = 0, di _F /dt = 100 A/∞s

Note: 3. Pulse test

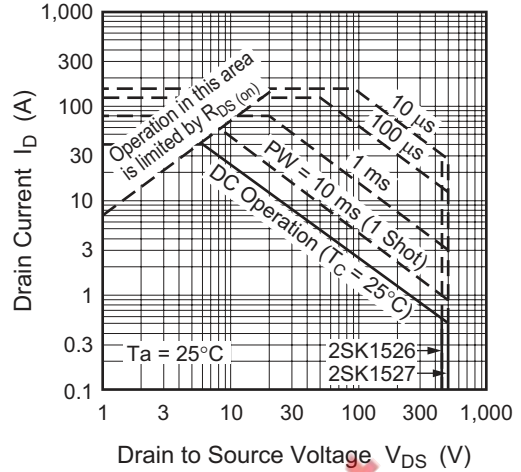
Main Characteristics



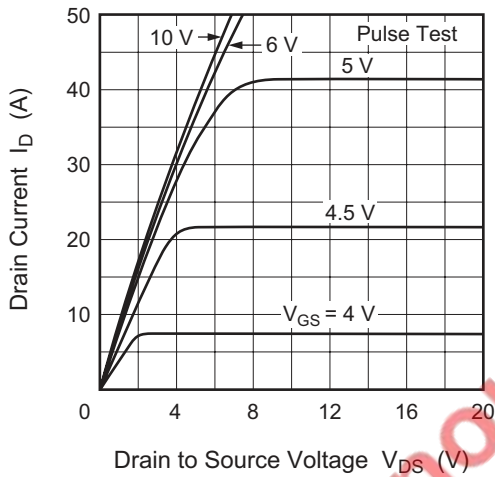
Power vs. Temperature Derating



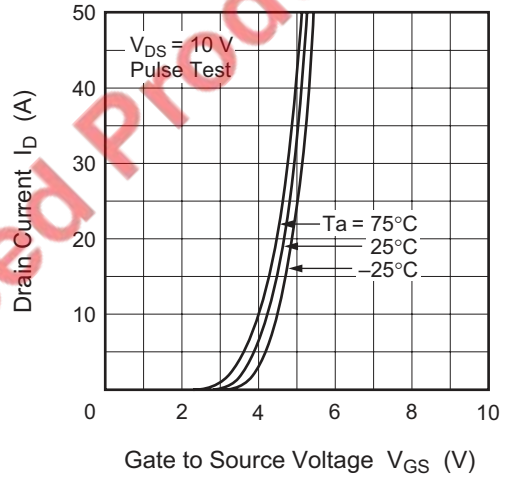
Maximum Safe Operation Area



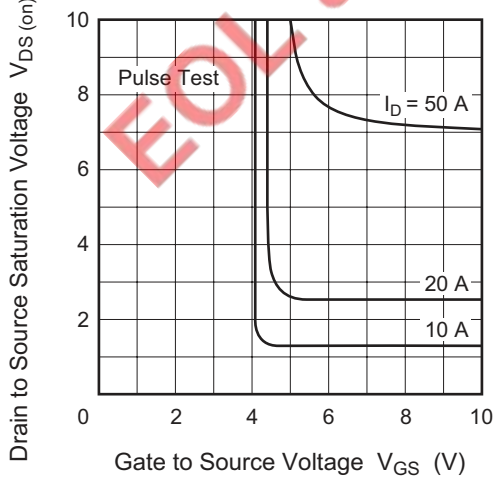
Typical Output Characteristics



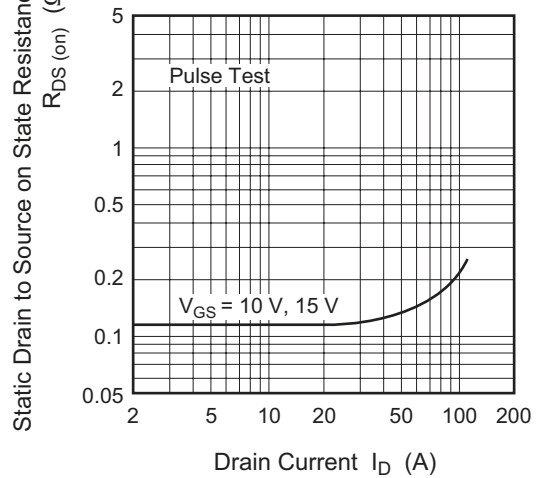
Typical Transfer Characteristics



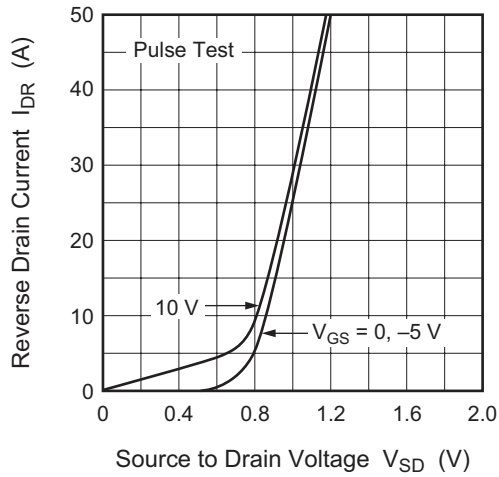
Drain to Source Saturation Voltage vs. Gate to Source Voltage



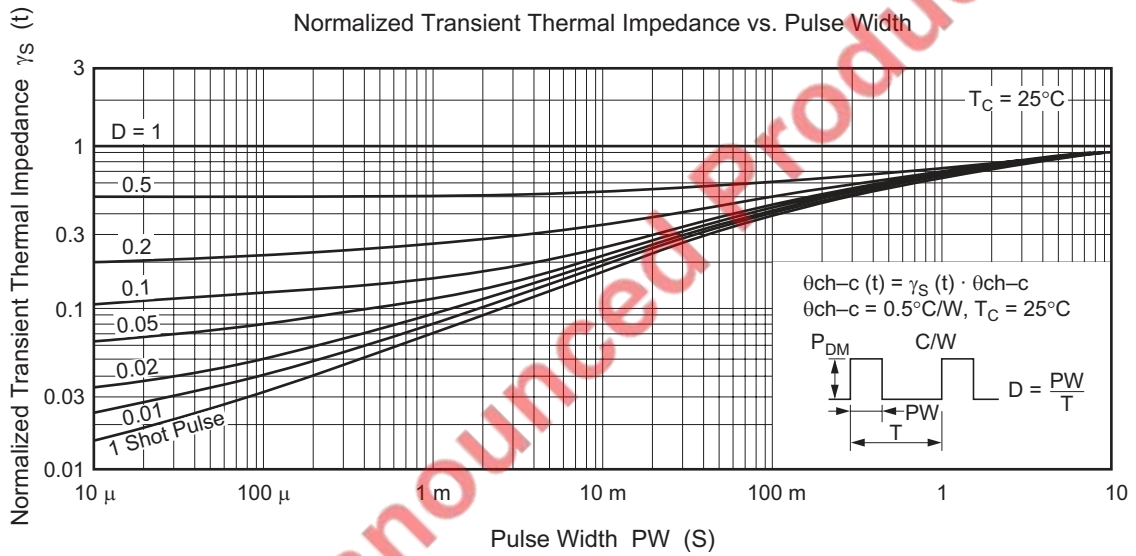
Static Drain to Source on State Resistance vs. Drain Current



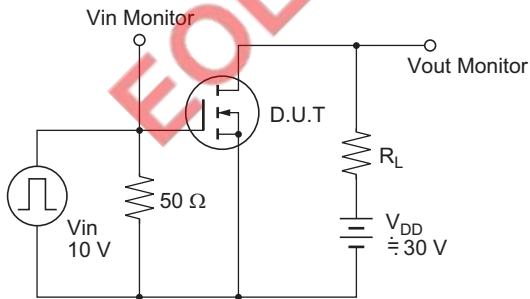
Reverse Drain Current vs. Source to Drain Voltage



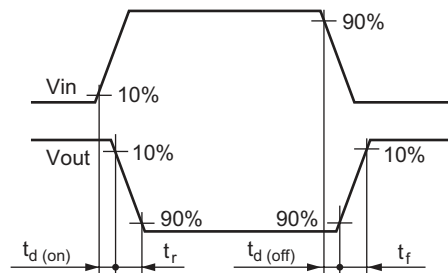
Normalized Transient Thermal Impedance vs. Pulse Width



Switching Time Test Circuit



Waveforms



Package Dimensions

Package Name	JEITA Package Code	RENESAS Code	Previous Code	MASS[Typ.]	Unit: mm
TO-3PL	—	PRSS0004ZF-A	TO-3PL / TO-3PLV	9.9g	

The drawing shows the following dimensions:

- Top view: Overall width 20.0 ± 0.3 mm, overall height 26.0 ± 0.3 mm, distance from top edge to mounting holes 6.0 ± 0.2 mm, distance between mounting holes 2.5 ± 0.3 mm, distance from center to mounting holes 5.45 ± 0.5 mm, hole diameter $\phi 3.3 \pm 0.2$ mm, distance from bottom edge to mounting holes 20.0 ± 0.6 mm, distance from bottom edge to lead start 2.5 ± 0.3 mm, lead thickness 1.4 mm, lead length 3.0 mm, lead width 2.2 mm, lead tip width 1.2 mm.
- Side view: Overall height 5.0 ± 0.2 mm, lead length 2.8 ± 0.2 mm, lead tip width 0.6 mm (tolerance $+0.25/-0.1$).
- Detail view: Lead thickness 1.0 mm, lead length 3.8 mm, lead tip width 7.4 mm.

Ordering Information

Part Name	Quantity	Shipping Container
2SK1526-E	250 pcs	Box (Tube)
2SK1527-E	250 pcs	Box (Tube)

Notes:

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