
2SK1151(L)(S), 2SK1152(L)(S)

Silicon N-Channel MOS FET

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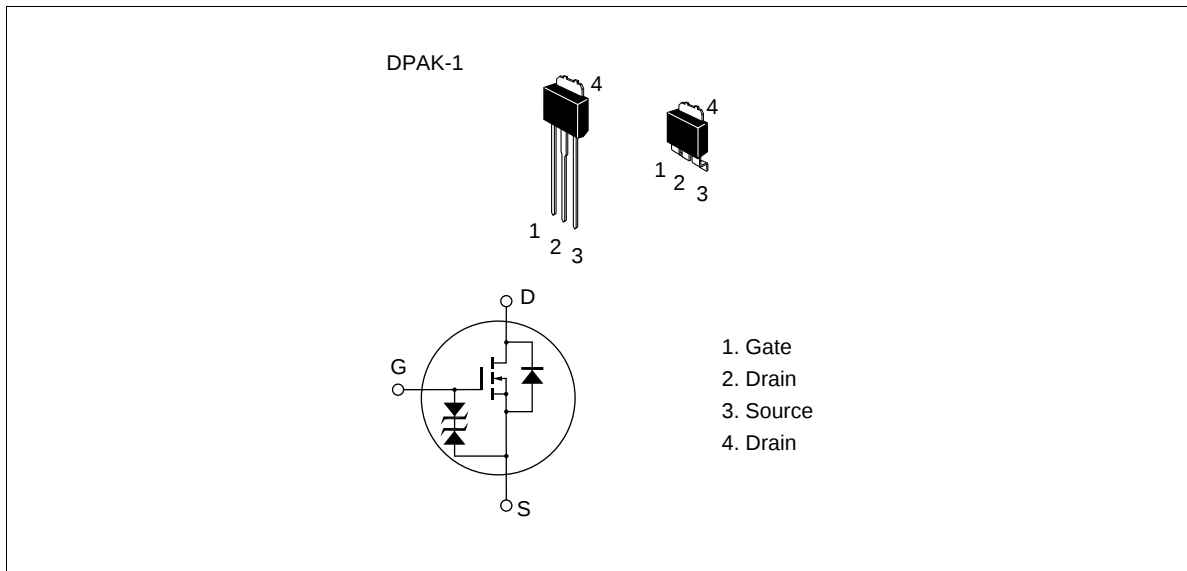
Application

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



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Absolute Maximum Ratings (Ta = 25°C)

Item		Symbol	Ratings	Unit
Drain to source voltage	2SK1151	V_{DSS}	450	V
	2SK1152		500	
Gate to source voltage		V_{GSS}	±30	V
Drain current		I_D	1.5	A
Drain peak current		$I_{D(pulse)}^{*1}$	6	A
Body to drain diode reverse drain current		I_{DR}	1.5	A
Channel dissipation		P_{ch}^{*2}	20	W
Channel temperature		Tch	150	°C
Storage temperature		Tstg	−55 to +150	°C

Notes: 1. $PW \leq 10 \mu s$, duty cycle $\leq 1\%$
2. Value at $T_C = 25^\circ C$

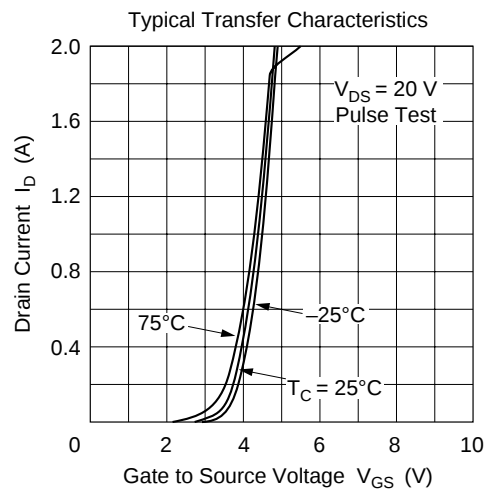
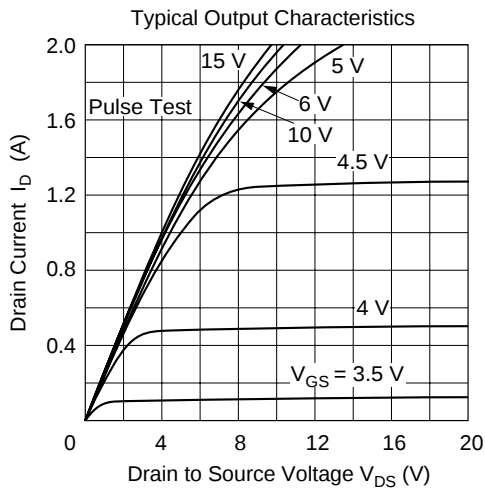
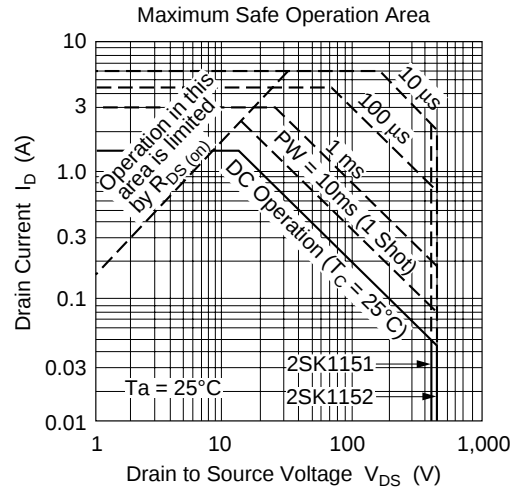
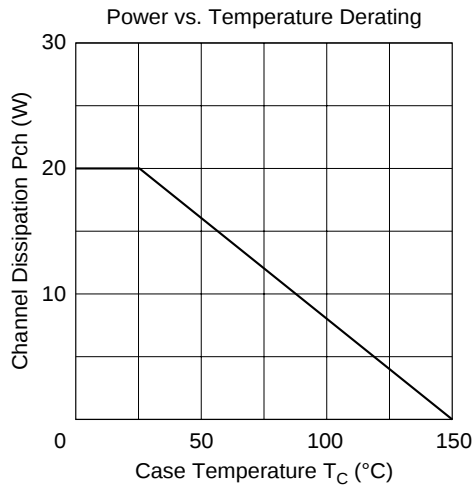
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Electrical Characteristics (Ta = 25°C)

Item		Symbol	Min	Typ	Max	Unit	Test conditions
Drain to source breakdown voltage	2SK1151 2SK1152	$V_{(BR)DSS}$	450 500	—	—	V	$I_D = 10 \text{ mA}$, $V_{GS} = 0$
Gate to source breakdown voltage		$V_{(BR)GSS}$	± 30	—	—	V	$I_G = \pm 100 \mu\text{A}$, $V_{DS} = 0$
Gate to source leak current		I_{GSS}	—	—	± 10	μA	$V_{GS} = \pm 25 \text{ V}$, $V_{DS} = 0$
Zero gate voltage drain current	2SK1151 2SK1152	I_{DSS}	—	—	100	μA	$V_{DS} = 360 \text{ V}$, $V_{GS} = 0$ $V_{DS} = 400 \text{ V}$, $V_{GS} = 0$
Gate to source cutoff voltage		$V_{GS(off)}$	2.0	—	3.0	V	$I_D = 1 \text{ mA}$, $V_{DS} = 10 \text{ V}$
Static Drain to source on state resistance	2SK1151 2SK1152	$R_{DS(on)}$	— —	3.5 4.0	5.5 6.0	Ω	$I_D = 1 \text{ A}$, $V_{GS} = 10 \text{ V}^{*1}$
Forward transfer admittance		$ y_{fs} $	0.6	1.1	—	S	$I_D = 1 \text{ A}$, $V_{DS} = 20 \text{ V}^{*1}$
Input capacitance		C_{iss}	—	160	—	pF	$V_{DS} = 10 \text{ V}$, $V_{GS} = 0$,
Output capacitance		C_{oss}	—	45	—	pF	$f = 1 \text{ MHz}$
Reverse transfer capacitance		C_{rss}	—	5	—	pF	
Turn-on delay time		$t_{d(on)}$	—	5	—	ns	$I_D = 1 \text{ A}$, $V_{GS} = 10 \text{ V}$,
Rise time		t_r	—	10	—	ns	$R_L = 30 \Omega$
Turn-off delay time		$t_{d(off)}$	—	20	—	ns	
Fall time		t_f	—	10	—	ns	
Body to drain diode forward voltage		V_{DF}	—	1.0	—	V	$I_F = 1.5 \text{ A}$, $V_{GS} = 0$
Body to drain diode reverse recovery time		t_{rr}	—	220	—	ns	$I_F = 1.5 \text{ A}$, $V_{GS} = 0$, $di_F/dt = 100 \text{ A}/\mu\text{s}$

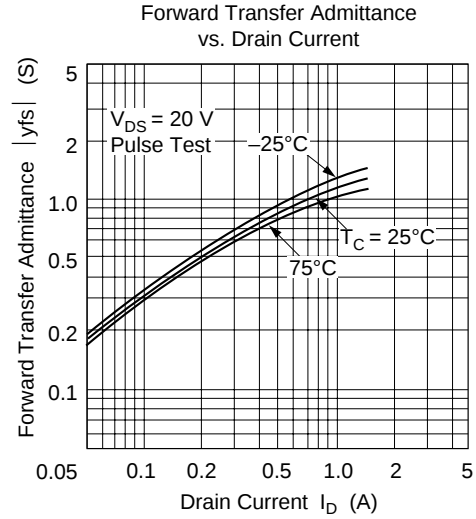
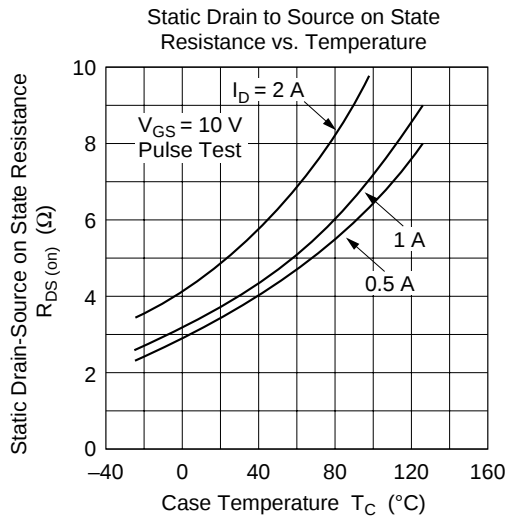
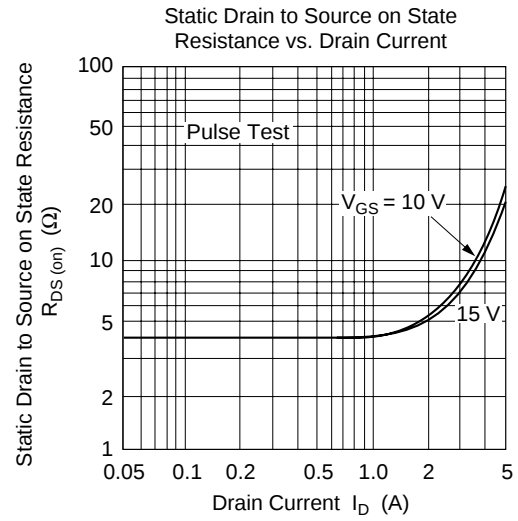
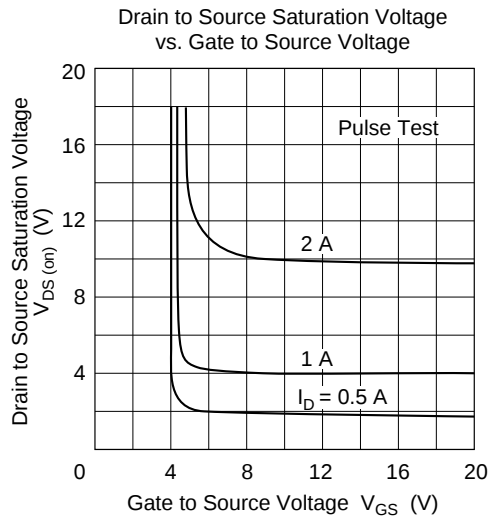
Note: 1. Pulse test

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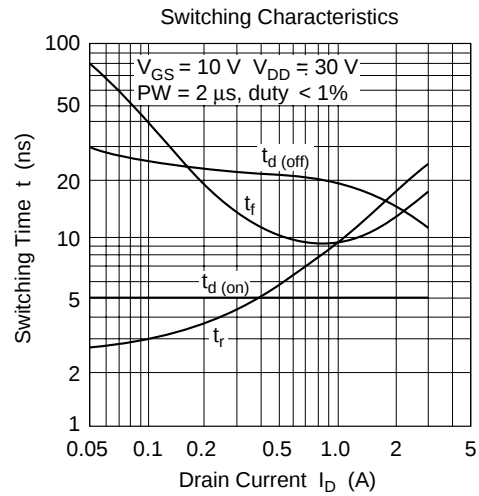
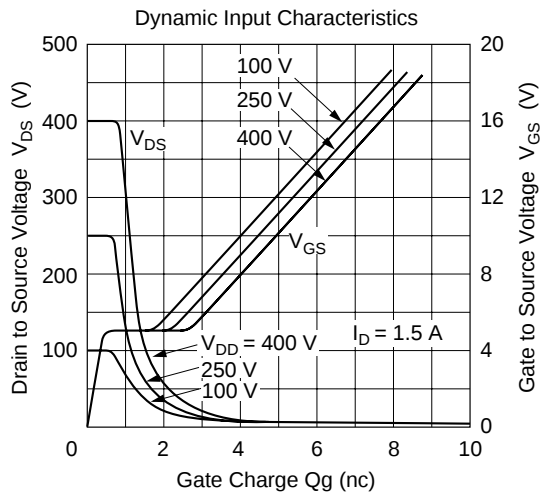
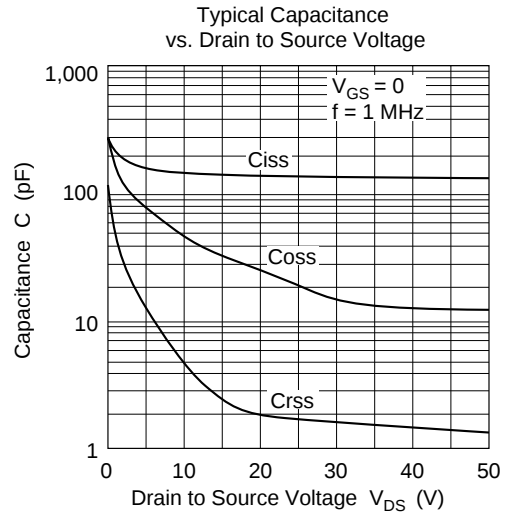
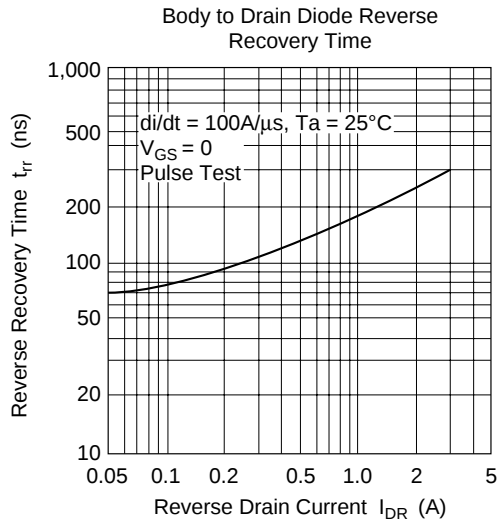


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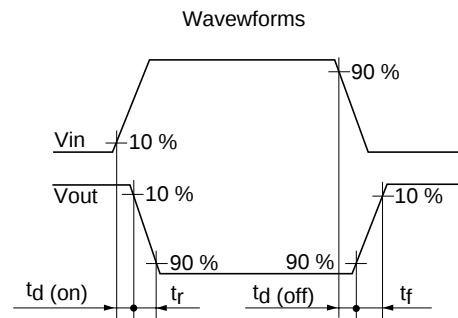
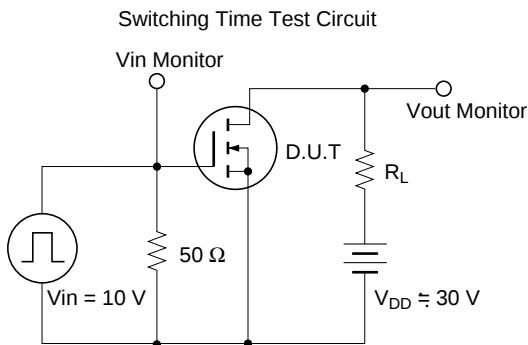
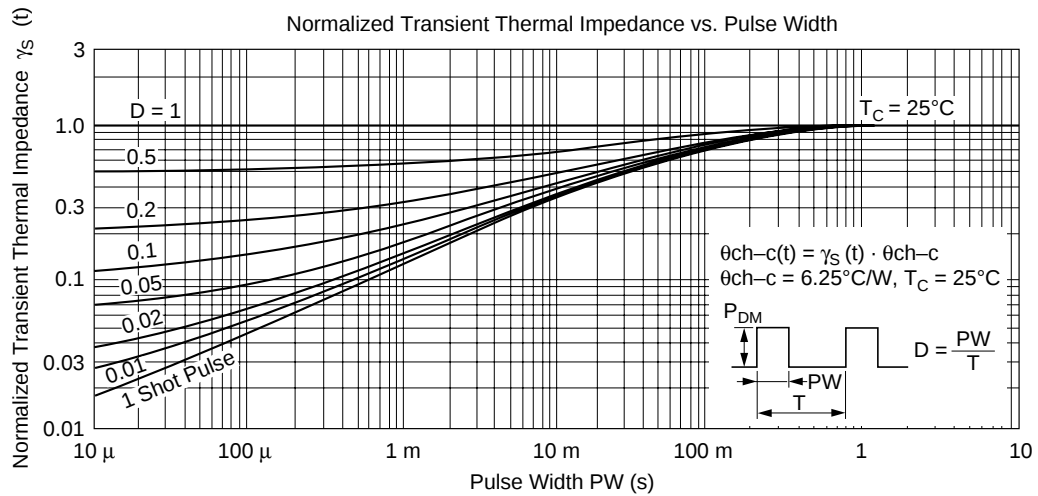
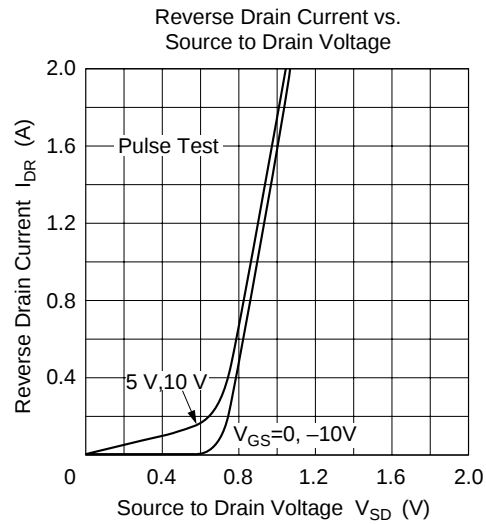


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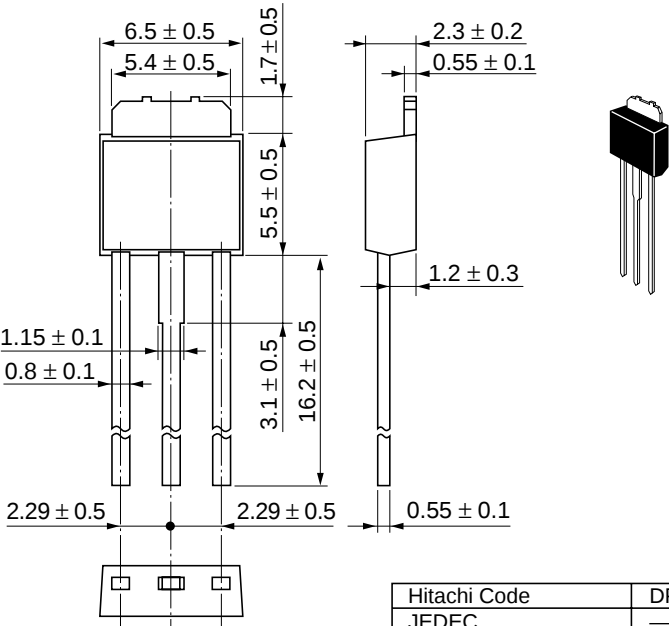
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Unit: mm



Hitachi Code	DPAK (L)-(1)
JEDEC	—
EIAJ	Conforms
Weight (reference value)	0.42 g

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