

2SK2529

Silicon N Channel MOS FET

Application

High speed power switching

Features

- Low on-resistance
 $R_{DS(on)} = 7\text{ m}\Omega$ typ.
- High speed switching
- 4 V gate drive device can be driven from 5 V souece

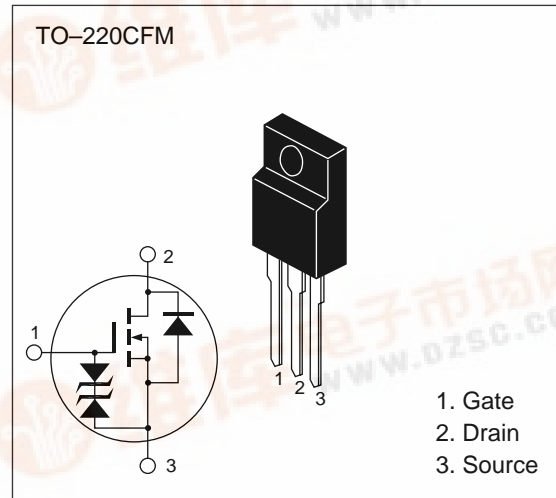


Table 1 Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

Item	Symbol	Ratings	Unit
Drain to source voltage	V_{DSS}	60	V
Gate to source voltage	V_{GSS}	± 20	V
Drain current	I_D	50	A
Drain peak current	$I_{D(pulse)}^*$	200	A
Body-drain diode reverse drain current	I_{DR}	50	A
Avalanche current	I_{AP}^{***}	45	A
Avalanche energy	E_{AR}^{***}	174	mJ
Channel dissipation	P_{ch}^{**}	35	W
Channel temperature	T_{ch}	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

* $PW \leq 10\ \mu\text{s}$, duty cycle $\leq 1\%$

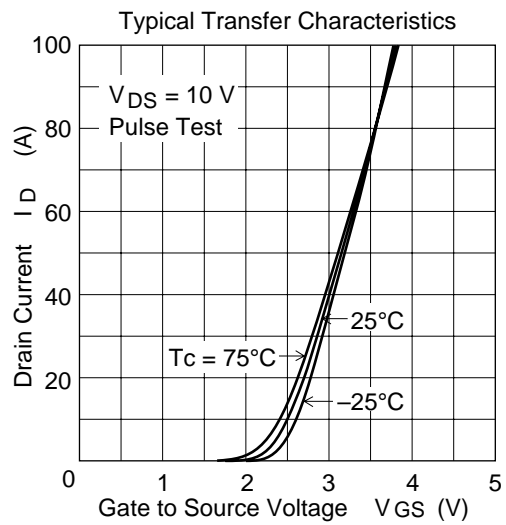
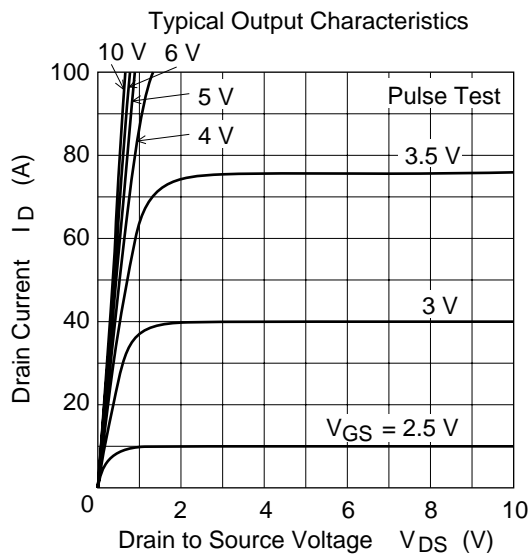
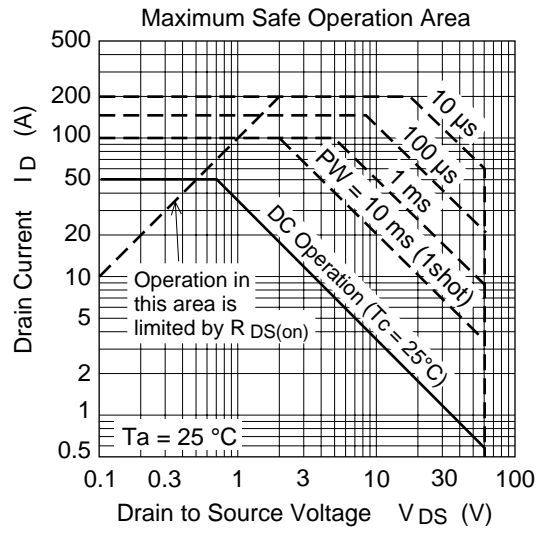
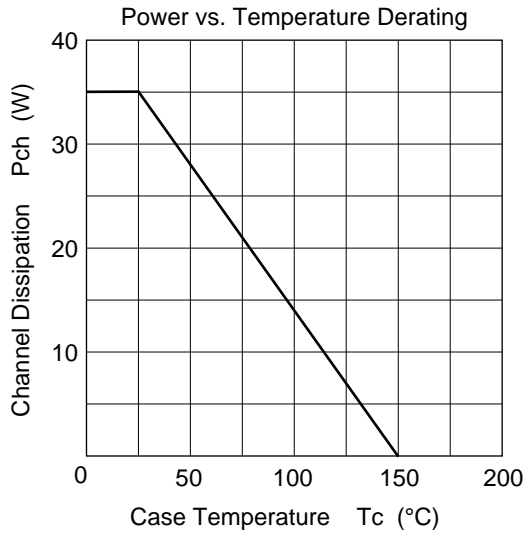
** Value at $T_c = 25^\circ\text{C}$

*** Value at $T_{ch} = 25^\circ\text{C}$, $R_g \geq 50\ \Omega$

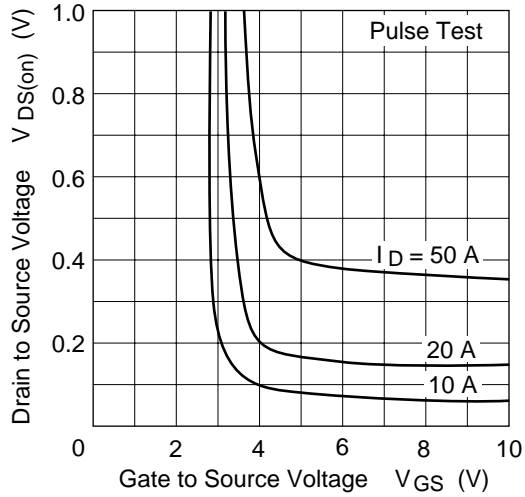
Table 2 Electrical Characteristics ($T_a = 25^\circ\text{C}$)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	60	—	—	V	$I_D = 10\text{ mA}$, $V_{GS} = 0$
Gate to source breakdown voltage	$V_{(BR)GSS}$	± 20	—	—	V	$I_G = \pm 100\text{ }\mu\text{A}$, $V_{DS} = 0$
Gate to source leak current	I_{GSS}	—	—	± 10	μA	$V_{GS} = \pm 16\text{ V}$, $V_{DS} = 0$
Zero gate voltage drain current	I_{DSS}	—	—	10	μA	$V_{DS} = 60\text{ V}$, $V_{GS} = 0$
Gate to source cutoff voltage	$V_{GS(off)}$	1.0	—	2.0	V	$I_D = 1\text{ mA}$, $V_{DS} = 10\text{ V}$
Static drain to source on state resistance	$R_{DS(on)}$	—	7	10	$\text{m}\Omega$	$I_D = 25\text{ A}$ $V_{GS} = 10\text{ V}^*$
		—	10	16	$\text{m}\Omega$	$I_D = 25\text{ A}$ $V_{GS} = 4\text{ V}^*$
Forward transfer admittance	$ y_{fs} $	35	55	—	S	$I_D = 25\text{ A}$ $V_{DS} = 10\text{ V}^*$
Input capacitance	C_{iss}	—	3550	—	pF	$V_{DS} = 10\text{ V}$
Output capacitance	C_{oss}	—	1760	—	pF	$V_{GS} = 0$
Reverse transfer capacitance	C_{rss}	—	500	—	pF	$f = 1\text{ MHz}$
Turn-on delay time	$t_{d(on)}$	—	35	—	ns	$I_D = 25\text{ A}$
Rise time	t_r	—	230	—	ns	$V_{GS} = 10\text{ V}$
Turn-off delay time	$t_{d(off)}$	—	470	—	ns	$R_L = 1.2\text{ }\Omega$
Fall time	t_f	—	360	—	ns	
Body-drain diode forward voltage	V_{DF}	—	0.85	—	V	$I_F = 50\text{ A}$, $V_{GS} = 0$
Body-drain diode reverse recovery time	t_{rr}	—	145	—	ns	$I_F = 50\text{ A}$, $V_{GS} = 0$ $di_F / dt = 50\text{ A} / \mu\text{s}$

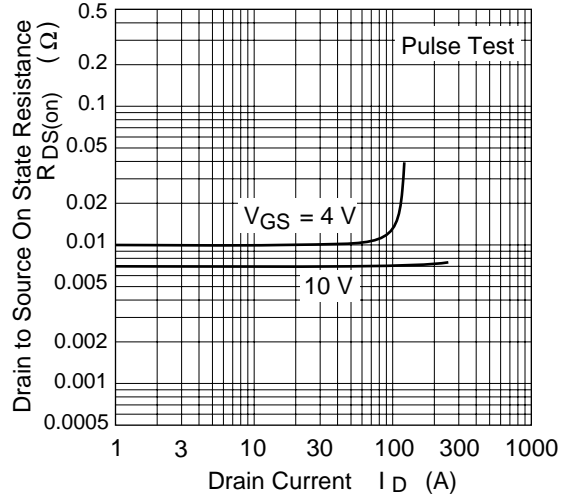
* Pulse Test



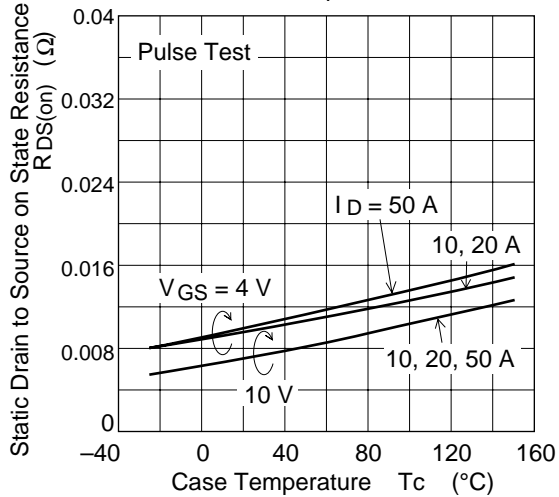
Drain to Source Saturation Voltage vs. Gate to Source Voltage



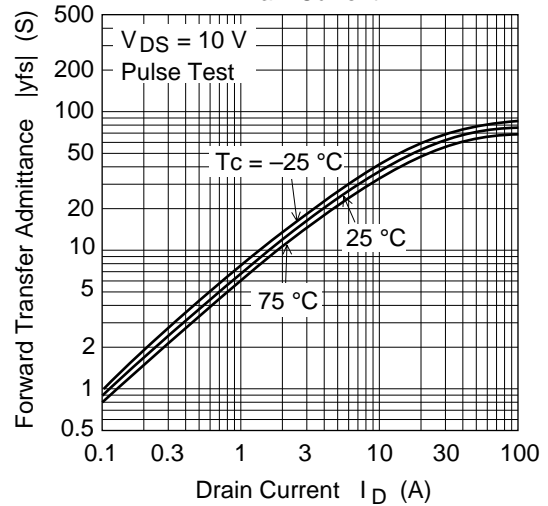
Static Drain to Source on State Resistance vs. Drain Current

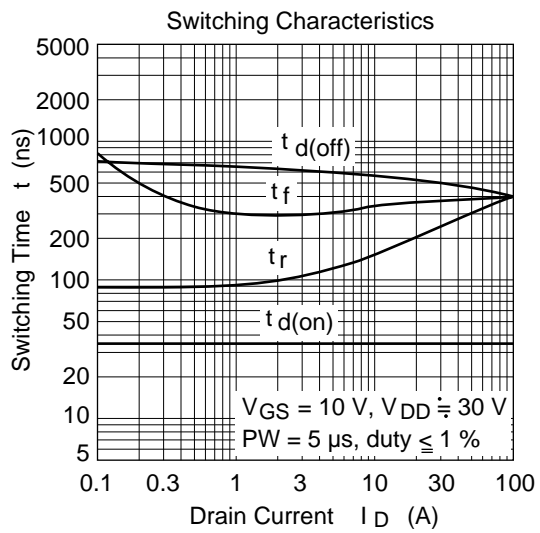
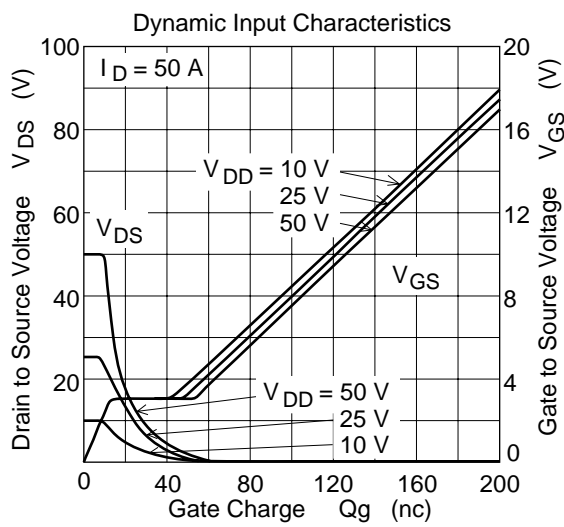
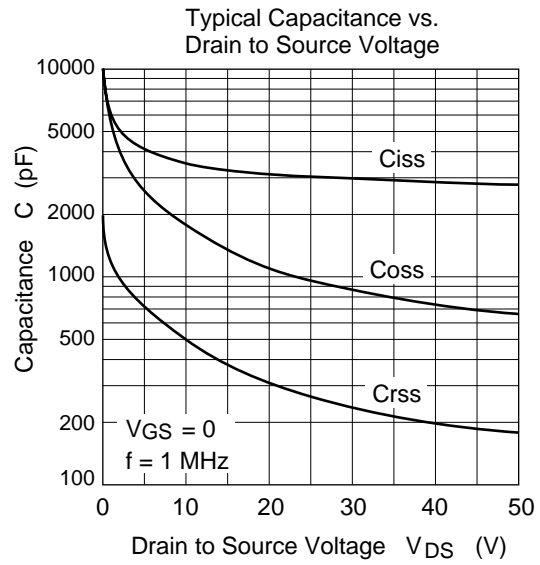
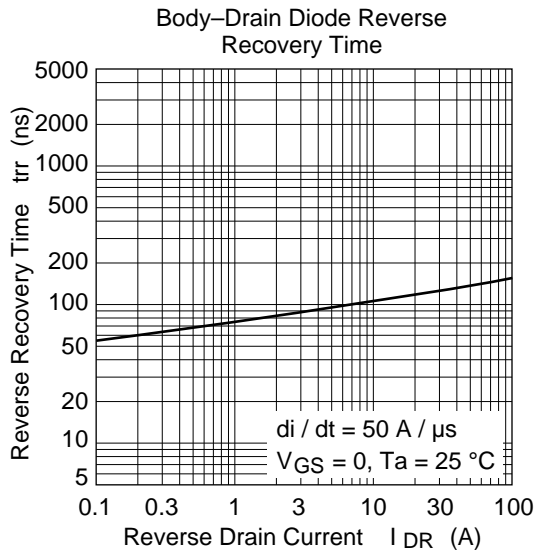


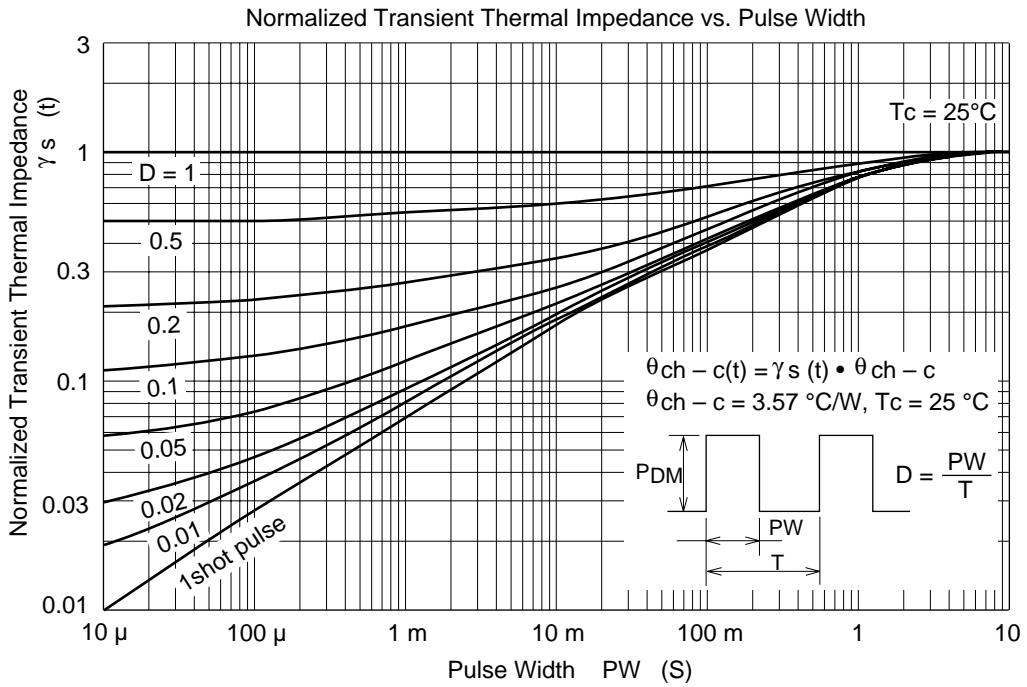
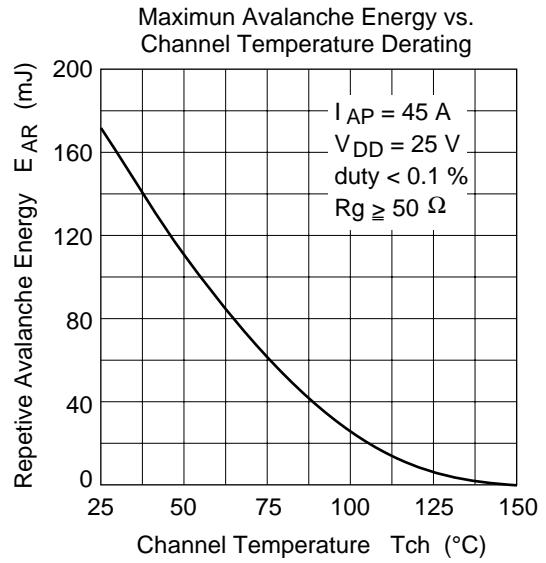
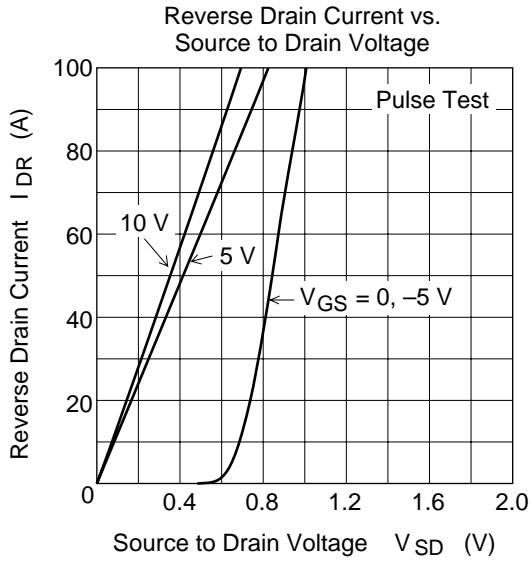
Static Drain to Source on State Resistance vs. Temperature



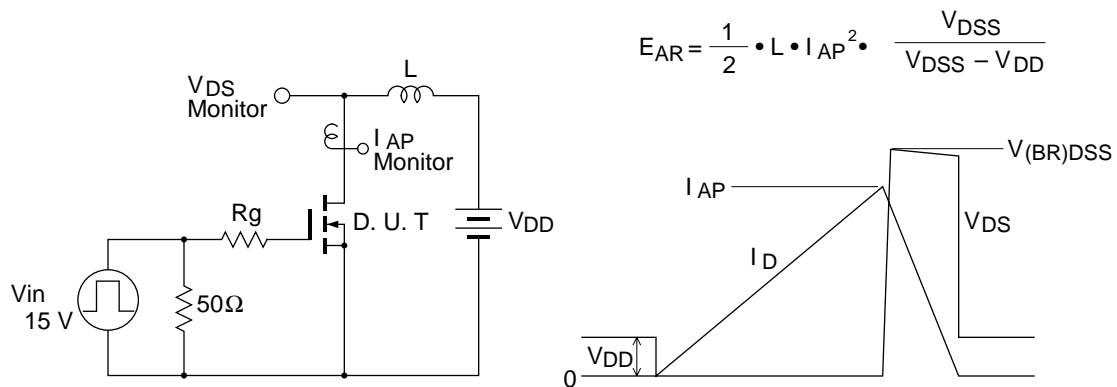
Forward Transfer Admittance vs. Drain Current



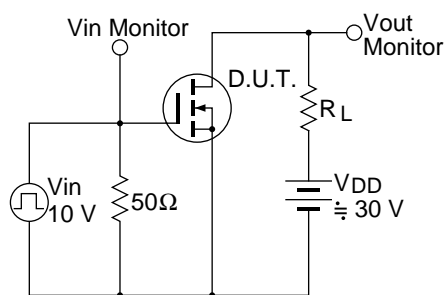




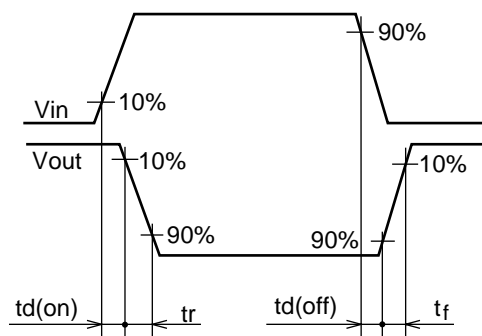
Avalanche Test Circuit and Waveform



Switching Time Test Circuit



Waveform



Package Dimensions

Unit : mm

