



# 2SK2349

## High-Voltage, High-Speed Switching Applications

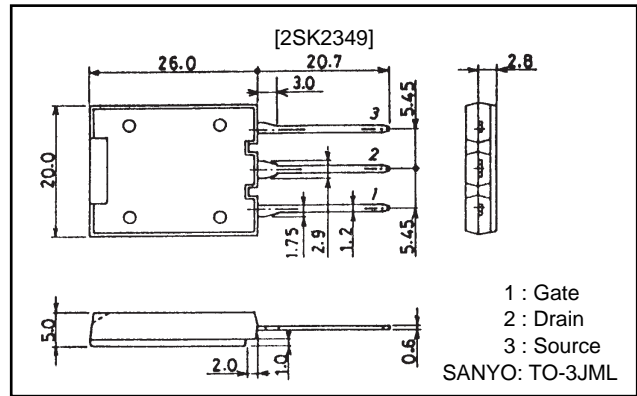
### Features

- Low ON resistance, ultrahigh-speed switching.
- High reliability (Adoption of HVP process).

### Package Dimensions

unit: mm

#### 2131-TO-3JML



### Specifications

#### Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V <sub>DSS</sub>		1500	V
Gate-to-Source Voltage	V <sub>GSS</sub>		±30	V
Drain Current (DC)	I <sub>D</sub>		10	A
Drain Current (pulse)	I <sub>DP</sub>	PW≤10μs, duty cycle≤1%	20	A
Allowable Power Dissipation	P <sub>D</sub>		4.6	W
		T <sub>c</sub> =25°C	160	W
Channel Temperature	T <sub>ch</sub>		150	°C
Storage temperature	T <sub>stg</sub>		-55 to +150	°C

#### Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
D-S Breakdown Voltage	V <sub>(BR)DSS</sub>	I <sub>D</sub> =1mA, V <sub>GS</sub> =0	1500			V
Zero-Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =1500V, V <sub>GS</sub> =0			1.0	mA
Gate-to Source Leak Current	I <sub>GSS</sub>	V <sub>GS</sub> =±30V, V <sub>DS</sub> =0			±100	nA
Cutoff Voltage	V <sub>GS(off)</sub>	V <sub>DS</sub> =10V, I <sub>D</sub> =1mA	1.5		3.5	V
Forward Transfer Admittance	y <sub>fs</sub>	V <sub>DS</sub> =20V, I <sub>D</sub> =5A	2.0	4.0		S
Static Drain-to-Source ON-State Resistance	R <sub>DS(on)</sub>	I <sub>D</sub> =5A, V <sub>GS</sub> =10V		1.5	2.5	Ω
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =20V, f=1MHz		2900		pF
Output Capacitance	C <sub>oss</sub>	V <sub>DS</sub> =20V, f=1MHz		400		pF
Reverse Transfer Capacitance	C <sub>rss</sub>	V <sub>DS</sub> =20V, f=1MHz		200		pF

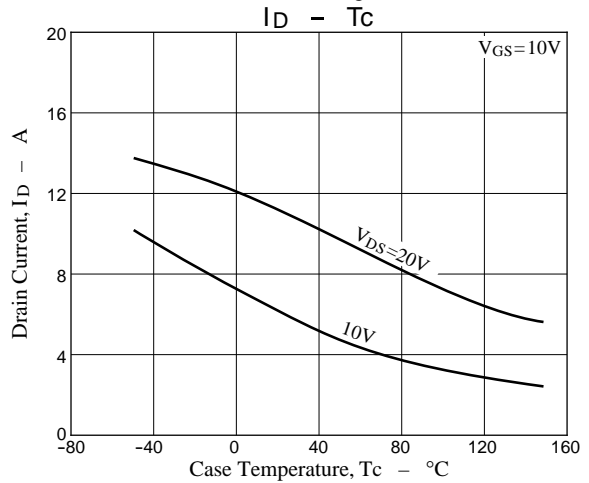
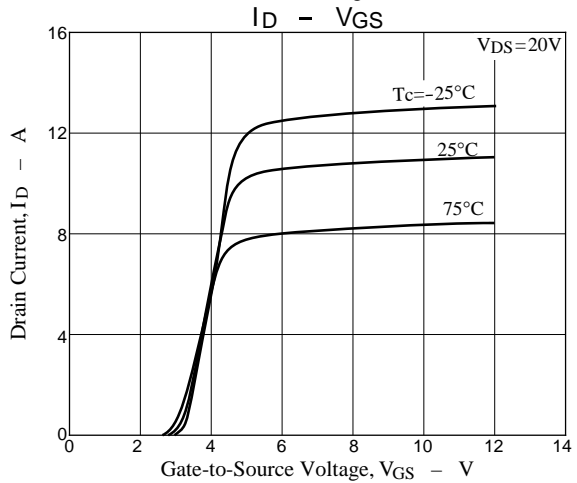
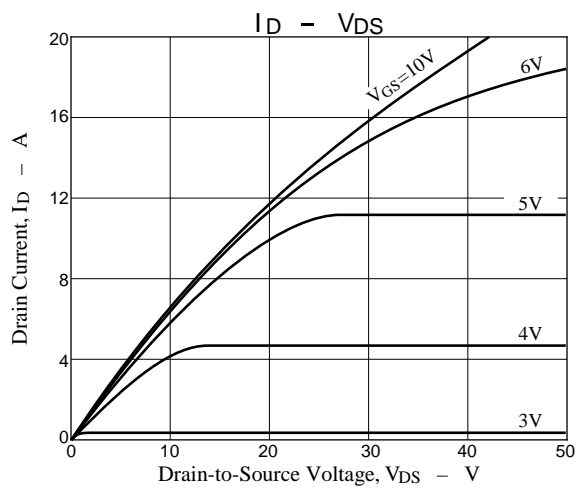
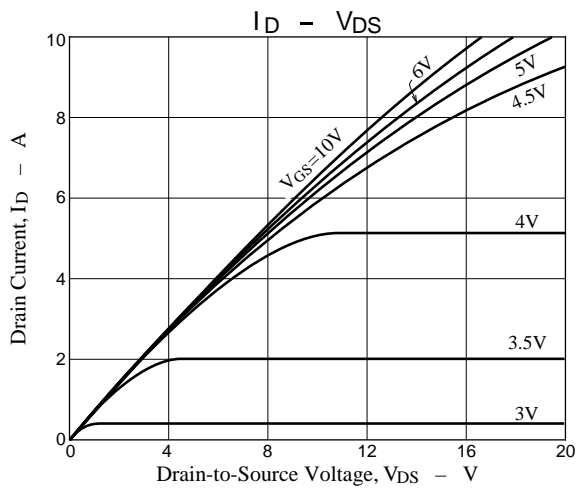
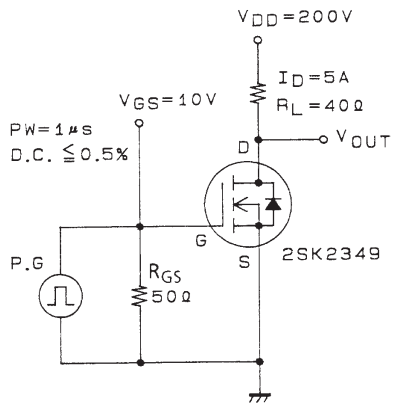
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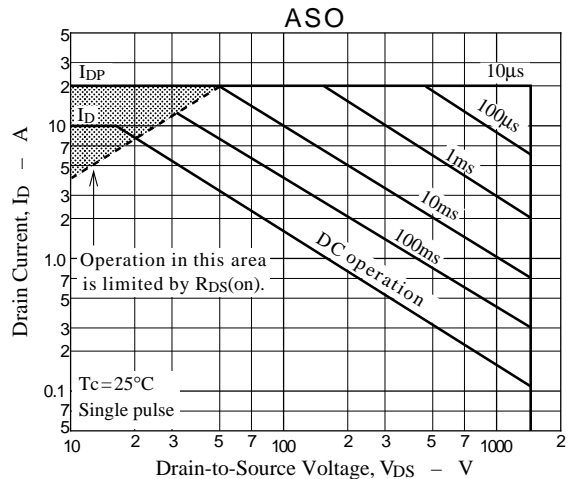
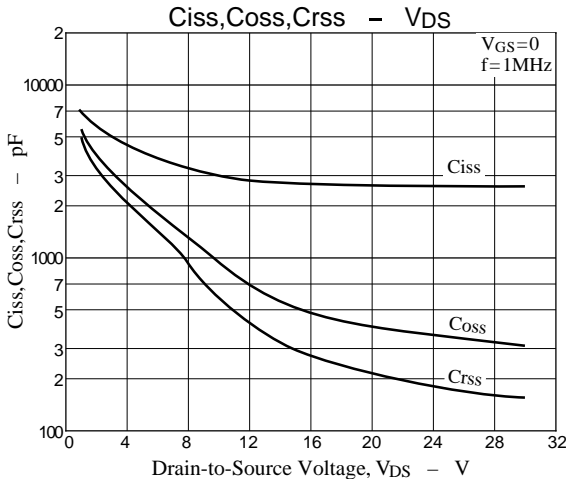
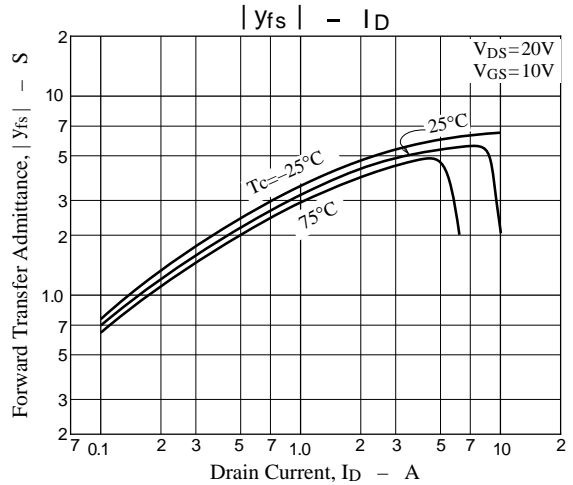
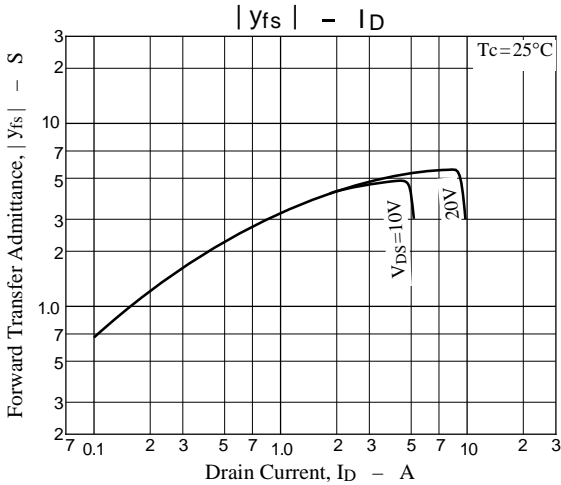
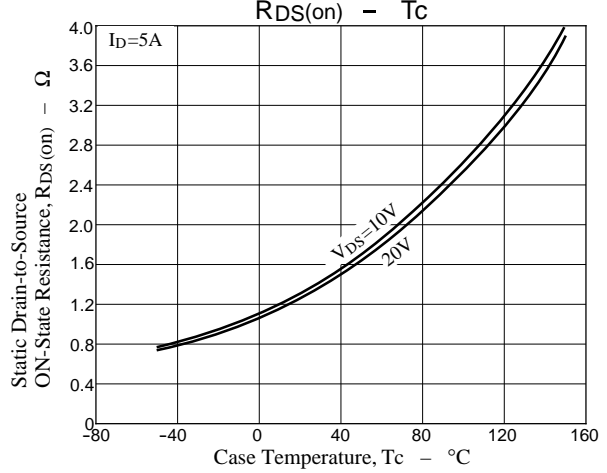
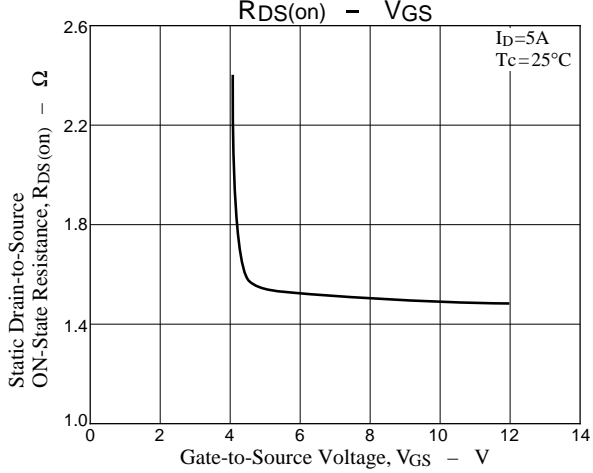
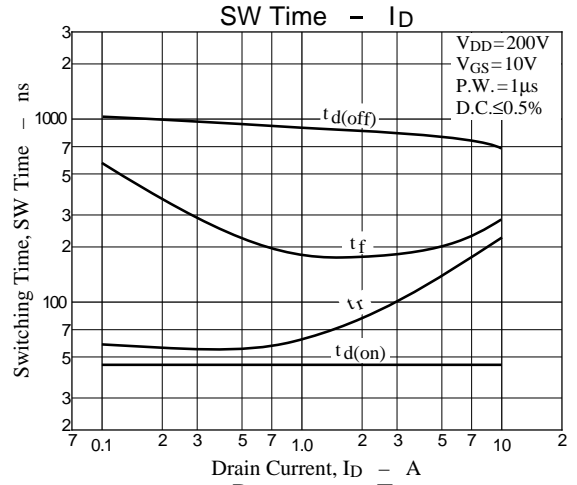
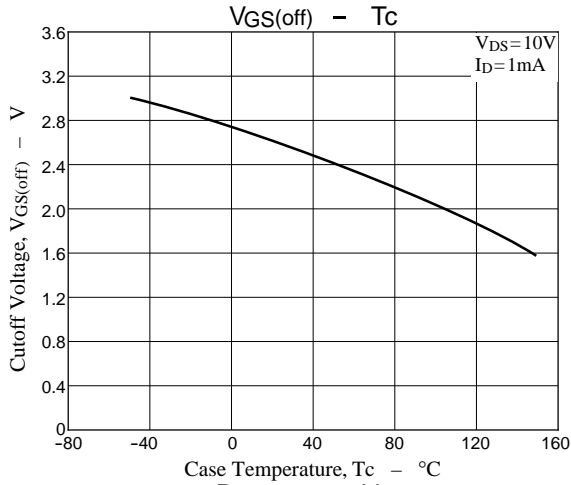
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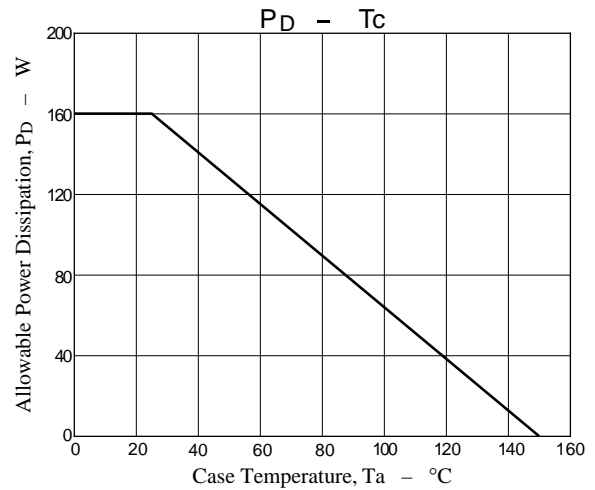
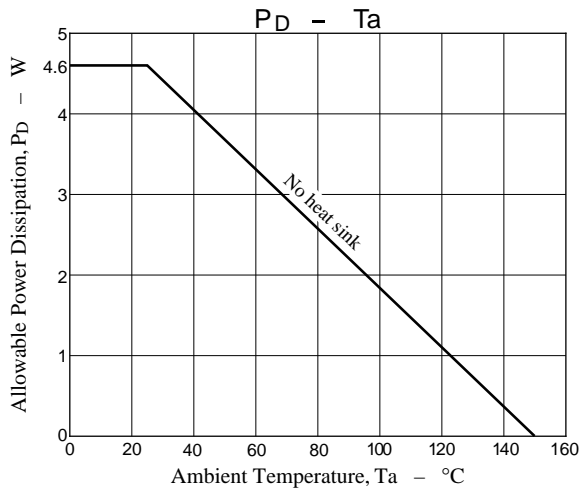
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Turn-ON Delay Time	$t_{d(on)}$	$I_D=5A, V_{GS}=10V, V_{DD}=200V, R_{GS}=50\Omega$		45		ns
Rise Time	$t_r$			150		ns
Turn-OFF Delay Time	$t_{d(off)}$			800		ns
Fall Time	$t_f$			200		ns
Diode Forward Voltage	$V_{SD}$	$I_S=10A, V_{GS}=0$			1.5	V
Reverse Recovery Time	$t_{rr}$	$I_S=10A, di/dt=100A/\mu s$		1.0	2.0	$\mu s$

## Switching Time Test Circuit







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