



SANYO Semiconductors

## DATA SHEET

# 2SK1461 — N-Channel Silicon MOSFET

## General-Purpose Switching Device Applications

### Features

- Low ON-state resistance.
- Ultrahigh-speed switching.

### Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V <sub>DSS</sub>		900	V
Gate-to-Source Voltage	V <sub>GSS</sub>		±30	V
Drain Current (DC)	I <sub>D</sub>		5	A
Drain Current (Pulse)	I <sub>DP</sub>	PW≤10μs, duty cycle≤1%	10	A
Allowable Power Dissipation	P <sub>D</sub>		2.5	W
		T <sub>c</sub> =25°C	120	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	
Drain-to-Source Breakdown Voltage	V <sub>(BR)DSS</sub>	I <sub>D</sub> =1mA, V <sub>GS</sub> =0V	900			V
Zero-Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =900V, V <sub>GS</sub> =0V			1.0	mA
Gate-to-Source Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> = ±30V, V <sub>DS</sub> =0V			±100	nA
Cutoff Voltage	V <sub>GS(off)</sub>	V <sub>DS</sub> =10V, I <sub>D</sub> =1mA	2.0		3.0	V
Forward Transfer Admittance	y <sub>fs</sub>	V <sub>DS</sub> =20V, I <sub>D</sub> =2A	1.0	2.0		S
Static Drain-to-Source On-State Resistance	R <sub>DS(on)</sub>	I <sub>D</sub> =2A, V <sub>GS</sub> =10V		2.8	3.6	Ω

(Note) Be careful in handling the 2SK1461 because it has no protection diode between gate and source.

Continued on next page.

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# 2SK1461

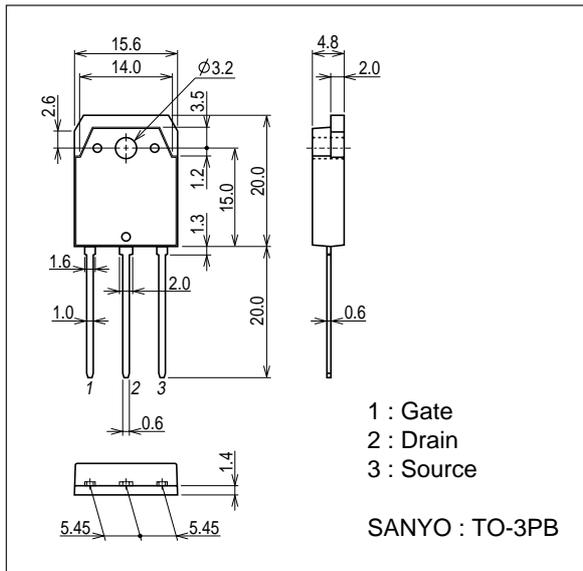
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	$V_{DS}=20V, f=1MHz$		700		pF
Output Capacitance	Coss	$V_{DS}=20V, f=1MHz$		300		pF
Reverse Transfer Capacitance	Crss	$V_{DS}=20V, f=1MHz$		170		pF
Turn-ON Delay Time	$t_d(on)$	$I_D=2A, V_{GS}=10V, V_{DD}=200V, R_{GS}=50\Omega$		15		ns
Rise Time	$t_r$	$I_D=2A, V_{GS}=10V, V_{DD}=200V, R_{GS}=50\Omega$		35		ns
Turn-OFF Delay Time	$t_d(off)$	$I_D=2A, V_{GS}=10V, V_{DD}=200V, R_{GS}=50\Omega$		200		ns
Fall Time	$t_f$	$I_D=2A, V_{GS}=10V, V_{DD}=200V, R_{GS}=50\Omega$		65		ns
Diode Forward Voltage	$V_{SD}$	$I_S=5A, V_{GS}=0V$			1.8	V

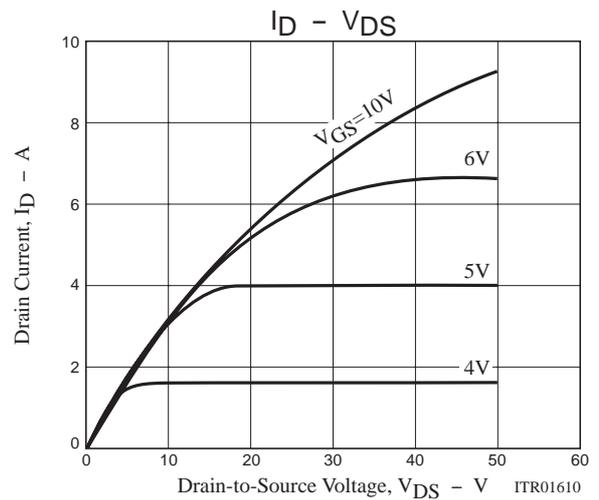
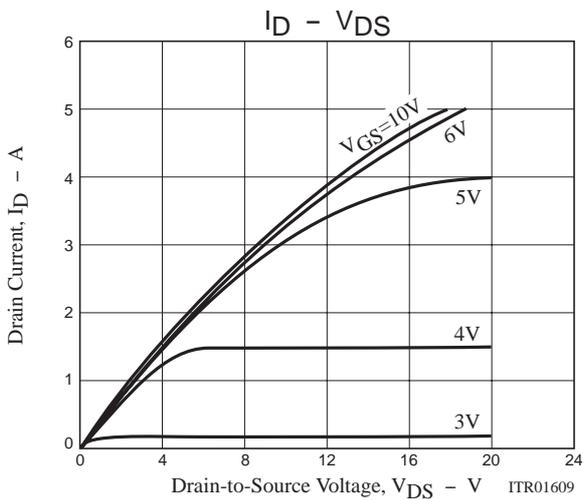
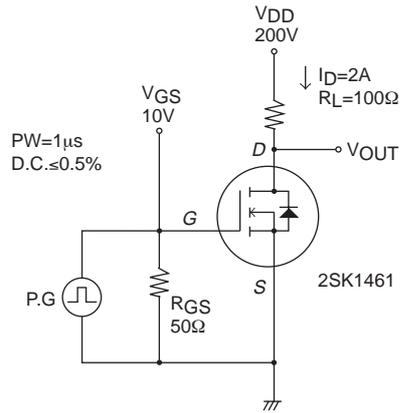
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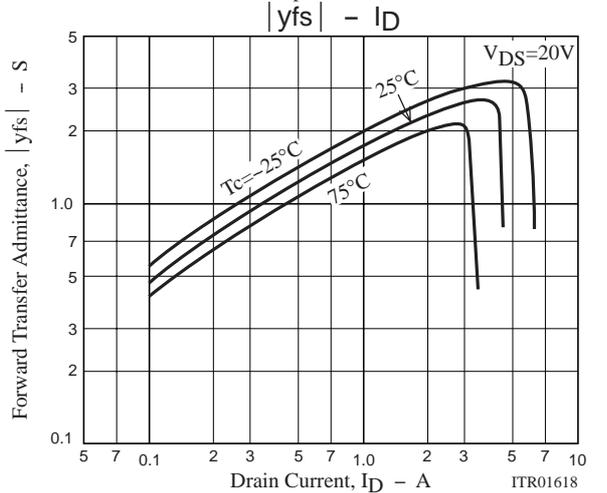
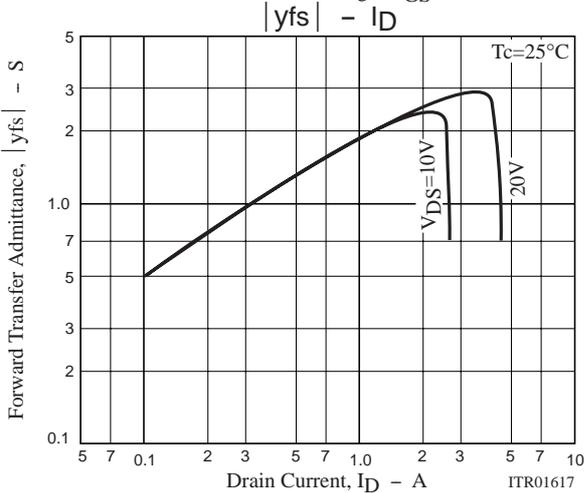
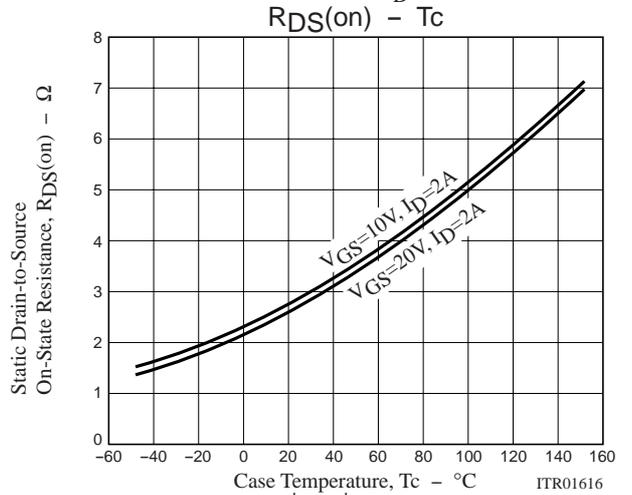
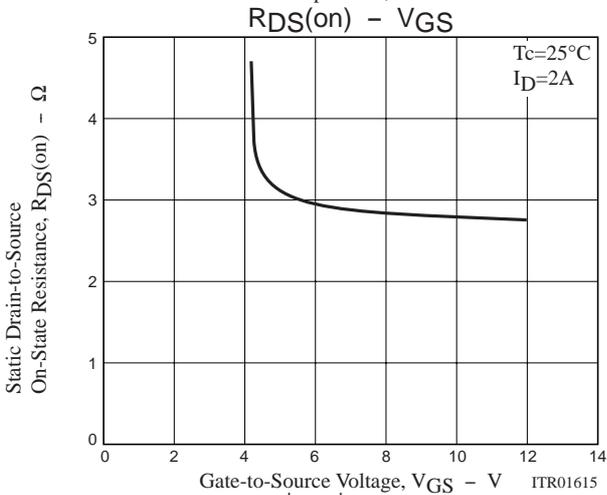
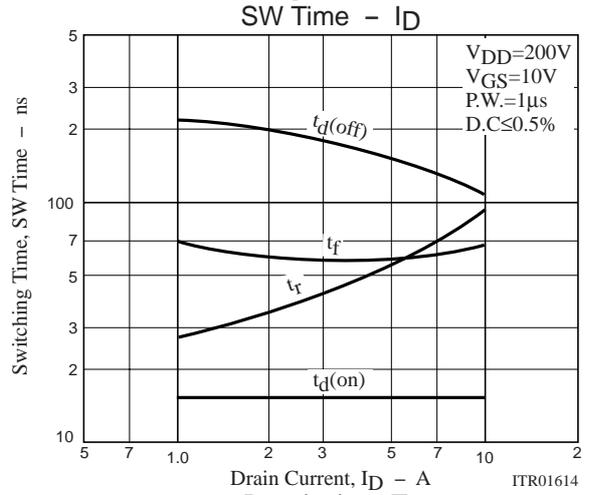
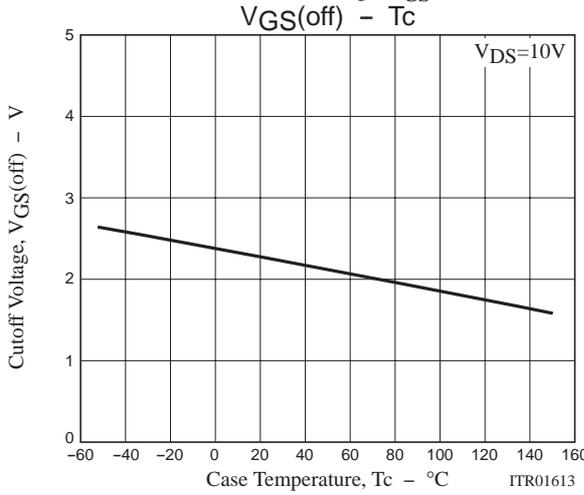
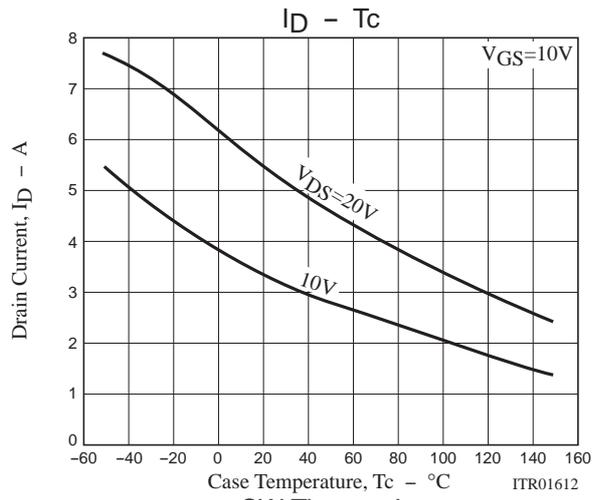
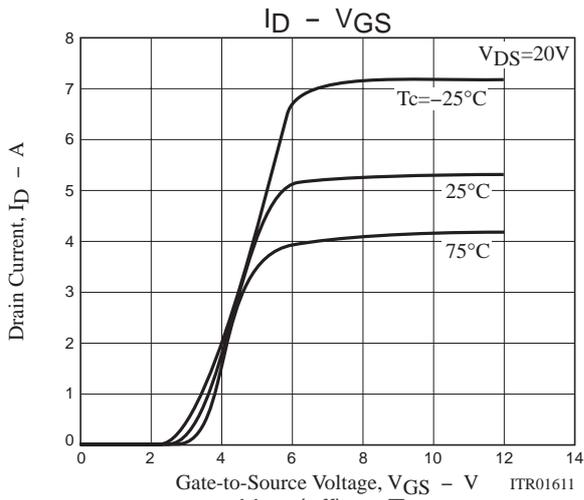
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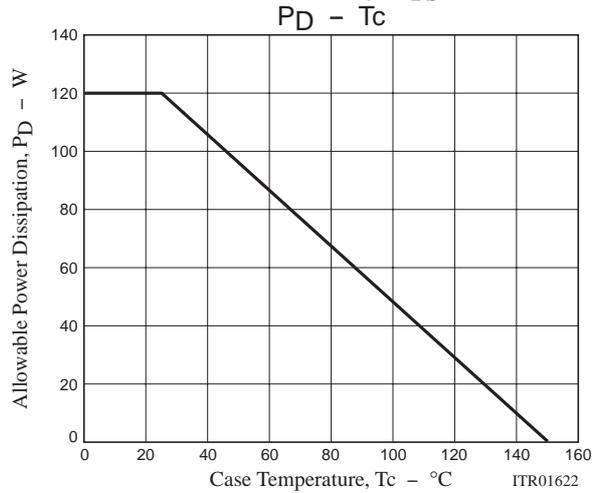
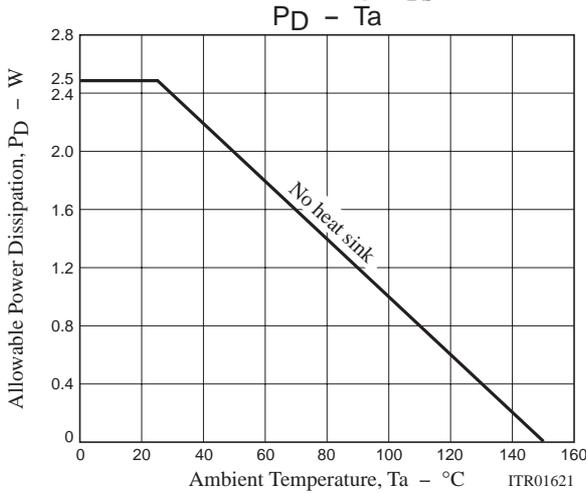
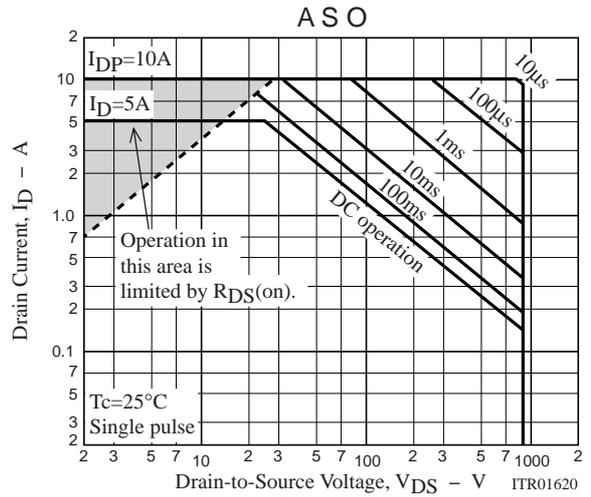
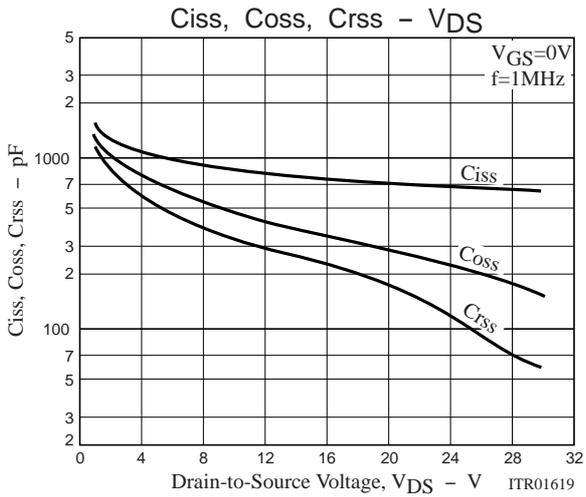
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## Switching Time Test Circuit







Note on usage : Since the 2SK1461 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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