

2SK1463

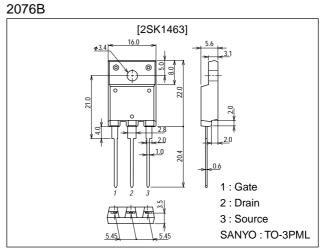
# **Ultrahigh-Speed Switching Applications**

### Features

- · Low ON-state resistance.
- · Ultrahigh-speed switching.
- $\cdot$  Converters.

## **Package Dimensions**

unit:mm



# **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	VGSS		±30	V
Drain Current (DC)	۱ <sub>D</sub>		4.5	A
Drain Current (Pulse)	I <sub>DP</sub>	PW≤10µs, duty cycle≤1%	9	A
Allowable Power Dissipation	PD	Tc=25°C	60	W
	U ' D		3.0	W
Channel Temperature	Tch		150	°C
Storage Temperature	Tstg		-55 to +150	°C

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

Symbol	Conditions	Ratings			Unit
		min	typ	max	Onit
V(BR)DSS	I <sub>D</sub> =1mA, V <sub>GS</sub> =0	900			V
IDSS	V <sub>DS</sub> =900V, V <sub>GS</sub> =0			1.0	mA
IGSS	V <sub>GS</sub> =±30V, V <sub>DS</sub> =0			±100	nA
VGS(off)	V <sub>DS</sub> =10V, I <sub>D</sub> =1mA	2.0		3.0	V
yfs	V <sub>DS</sub> =20V, I <sub>D</sub> =2A	1.0	2.0		S
R <sub>DS(on)</sub>	I <sub>D</sub> =2A, V <sub>GS</sub> =10V		2.8	3.6	Ω
	V(BR)DSS IDSS IGSS VGS(off)   yfs	V(BR)DSS ID=1mA, VGS=0   IDSS VDS=900V, VGS=0   IGSS VGS=±30V, VDS=0   VGS(off) VDS=10V, ID=1mA   I yfs VDS=20V, ID=2A	V(BR)DSS ID=1mA, VGS=0 900   IDSS VDS=900V, VGS=0 900   IGSS VGS=±30V, VDS=0 900   VGS(off) VDS=10V, ID=1mA 2.0   I yfs VDS=20V, ID=2A 1.0	Symbol Conditions min typ   V(BR)DSS Ip=1mA, V_GS=0 900 900   IDSS VDS=900V, V_GS=0 1000 1000   IGSS VGS=±30V, VDS=0 1000 1000   VGS(off) VDS=10V, Ip=1mA 2.00 1000   I yfs VDS=20V, Ip=2A 1.000 2.000	Symbol Conditions min typ max   V(BR)DSS ID=1mA, VGS=0 900 900 1.0   IDSS VDS=900V, VGS=0 1.0 1.0 1.0   IGSS VGS=±30V, VDS=0 ±100 1.0   VGS(off) VDS=10V, ID=1mA 2.0 3.0   I yfs I VDS=20V, ID=2A 1.0 2.0

(Note) Be careful in handling the 2SK1463 because it has no protection diode between gate and source.

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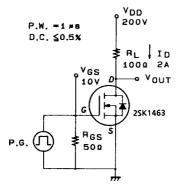
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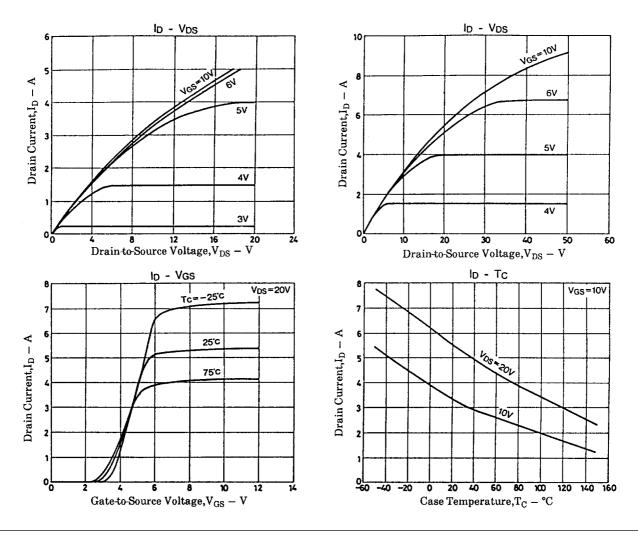
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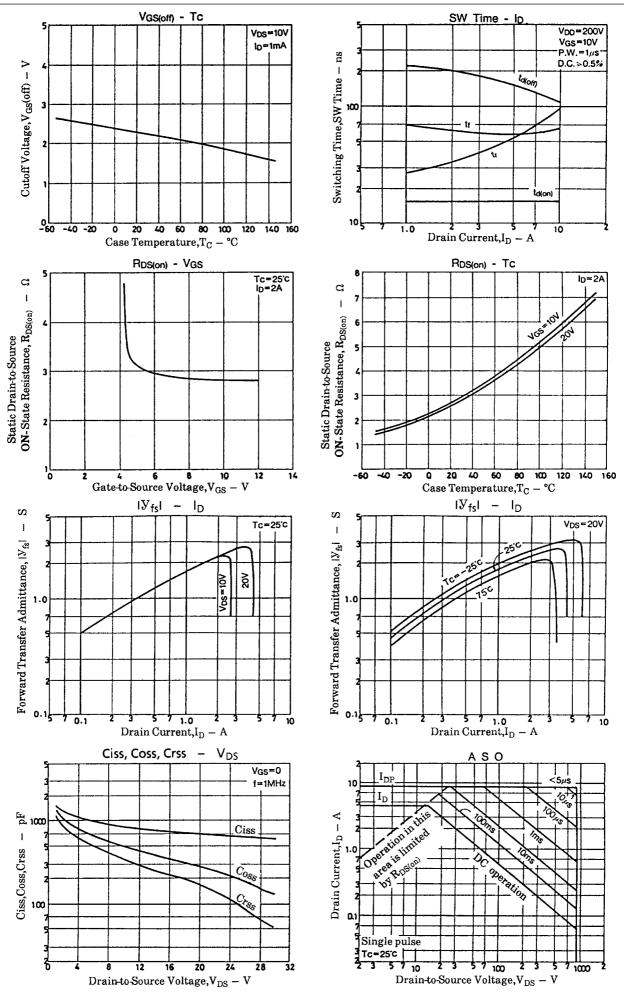
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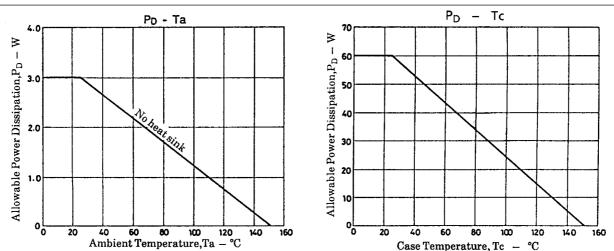
Parameter	Symbol	Conditions	Ratings			Unit
Faranielei			min	typ	max	Unit
Input Capacitance	Ciss	V <sub>DS</sub> =20V, f=1MHz		700		pF
Output Capacitance	Coss	V <sub>DS</sub> =20V, f=1MHz		300		pF
Reverse Transfer Capacitance	Crss	V <sub>DS</sub> =20V, f=1MHz		170		pF
Turn-ON Delay Time	<sup>t</sup> d(on)	$I_D=2A$ , $V_{GS}=10V$ , $V_{DD}=200V$ , $R_{GS}=50\Omega$		15		ns
Rise Time	t <sub>r</sub>	$I_D=2A$ , $V_{GS}=10V$ , $V_{DD}=200V$ , $R_{GS}=50\Omega$		35		ns
Turn-OFF Delay Time	<sup>t</sup> d(off)	$I_D=2A$ , $V_{GS}=10V$ , $V_{DD}=200V$ , $R_{GS}=50\Omega$		200		ns
Fall Time	t <sub>f</sub>	$I_D=2A$ , $V_{GS}=10V$ , $V_{DD}=200V$ , $R_{GS}=50\Omega$		65		ns
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =4.5A, V <sub>GS</sub> =0			1.8	V

#### Switching Time Test Circuit









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