



# 2SK3979 — N-Channel Silicon MOSFET

## General-Purpose Switching Device Applications

### Features

- Low ON-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>		200	V
Gate-to-Source Voltage	V <sub>GSS</sub>		±30	V
Drain Current (DC)	I <sub>D</sub>		6	A
Drain Current (Pulse)	I <sub>DP</sub>	PW≤10μs, duty cycle≤1%	24	A
Allowable Power Dissipation	P <sub>D</sub>		1	W
		T <sub>c</sub> =25°C	20	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	200			V
Zero-Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =200V, V <sub>GS</sub> =0V			1	μA
Gate-to-Source Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> =±24V, V <sub>DS</sub> =0V			±1	μA
Cutoff Voltage	V <sub>GS(off)</sub>	V <sub>DS</sub> =10V, I <sub>D</sub> =1mA	2.0		3.2	V
Forward Transfer Admittance	y <sub>fs</sub>	V <sub>DS</sub> =10V, I <sub>D</sub> =3A	2.1	3.5		S
Static Drain-to-Source On-State Resistance	R <sub>DS(on)</sub>	I <sub>D</sub> =3A, V <sub>GS</sub> =10V		320	450	mΩ
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =20V, f=1MHz		1090		pF
Output Capacitance	C <sub>oss</sub>	V <sub>DS</sub> =20V, f=1MHz		85		pF
Reverse Transfer Capacitance	C <sub>rss</sub>	V <sub>DS</sub> =20V, f=1MHz		35		pF

Marking : K3979

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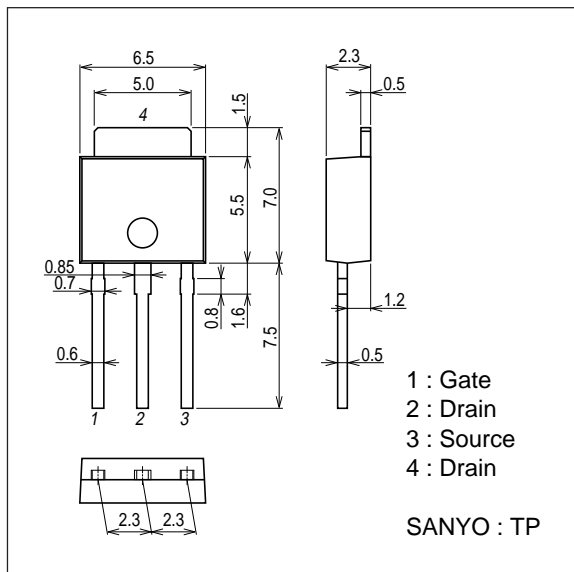
# 2SK3979

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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit.		17.5		ns
Rise Time	$t_r$	See specified Test Circuit.		26		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit.		50		ns
Fall Time	$t_f$	See specified Test Circuit.		42		ns
Total Gate Charge	$Q_g$	$V_{DS}=100V, V_{GS}=10V, I_D=6A$		18.2		nC
Gate-to-Source Charge	$Q_{gs}$	$V_{DS}=100V, V_{GS}=10V, I_D=6A$		8.0		nC
Gate-to-Drain "Miller" Charge	$Q_{gd}$	$V_{DS}=100V, V_{GS}=10V, I_D=6A$		7.0		nC
Diode Forward Voltage	$V_{SD}$	$I_S=6A, V_{GS}=0V$		0.86	1.2	V

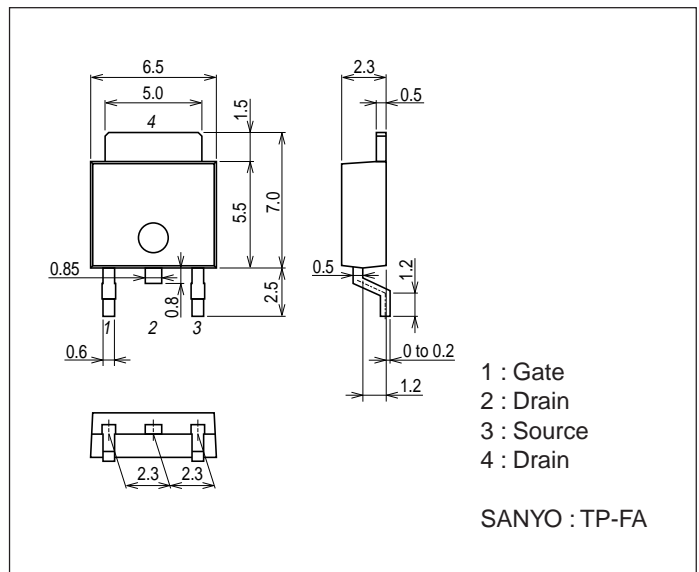
## Package Dimensions

unit : mm (typ)  
7518-004

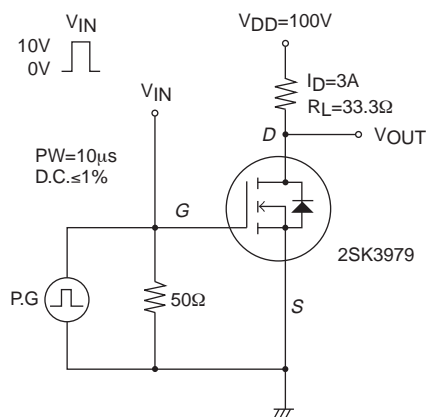


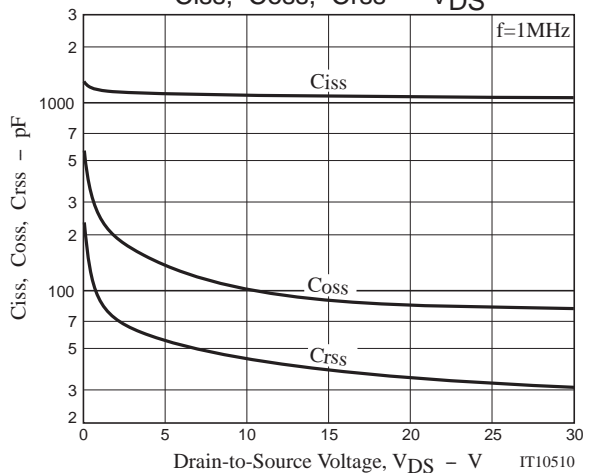
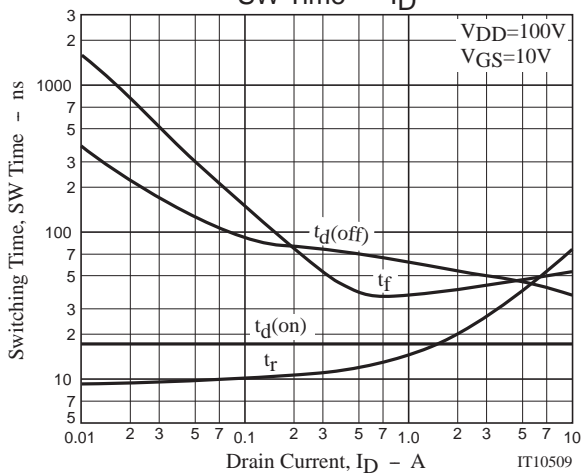
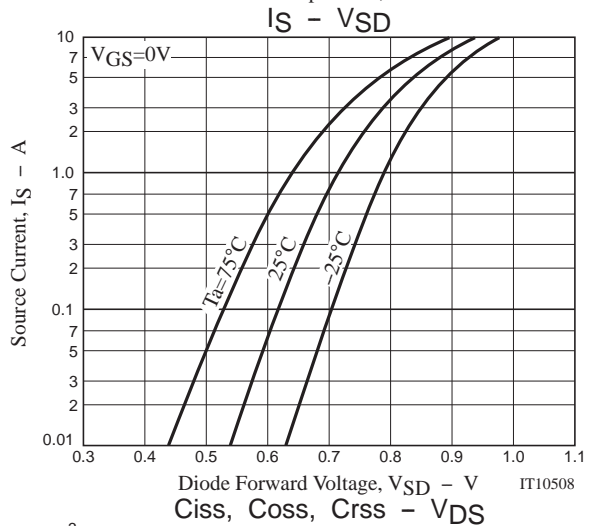
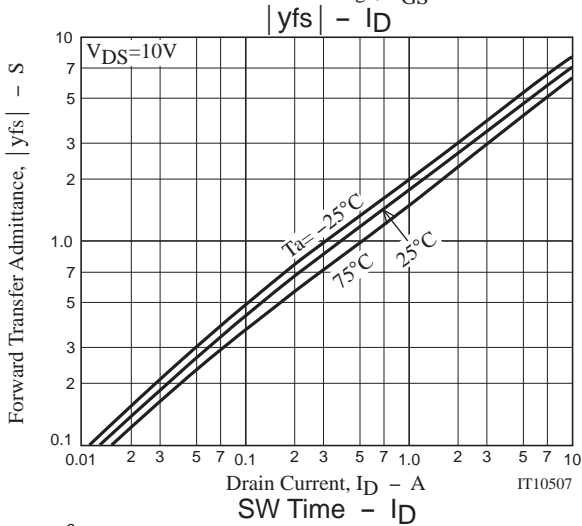
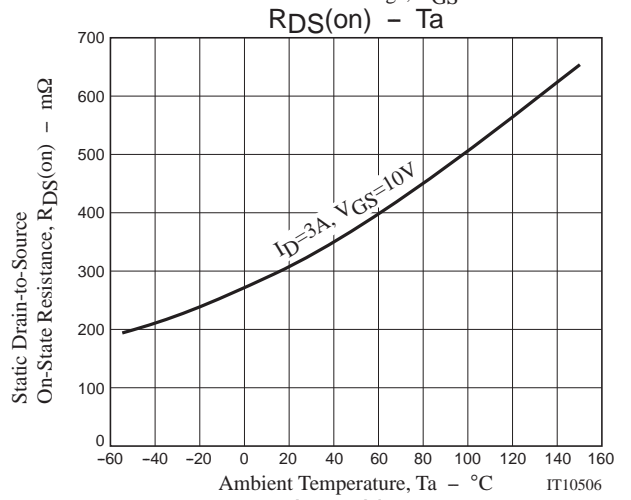
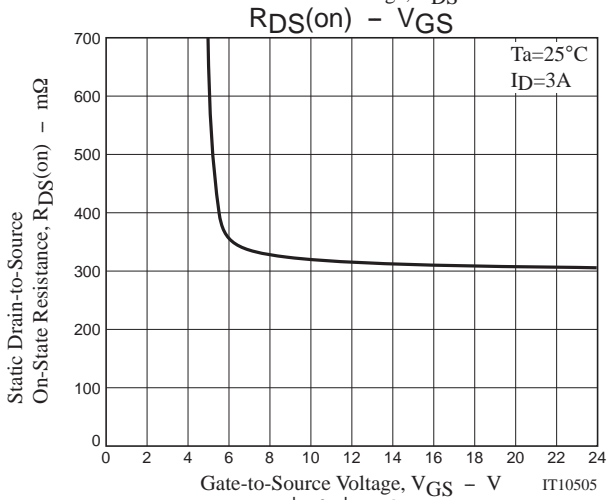
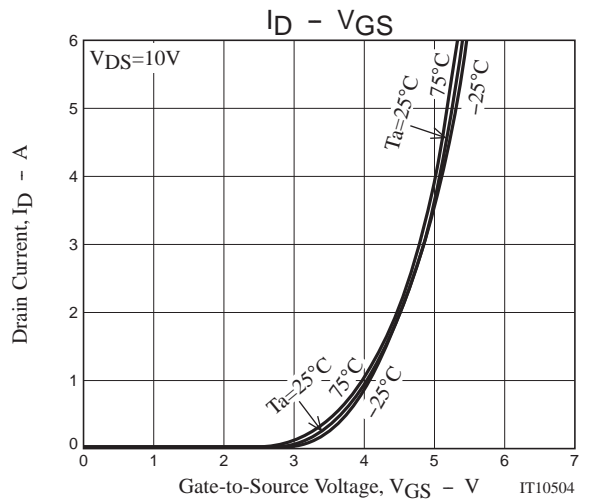
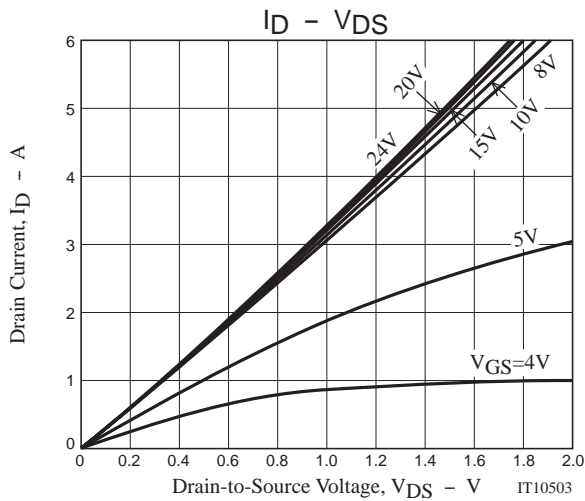
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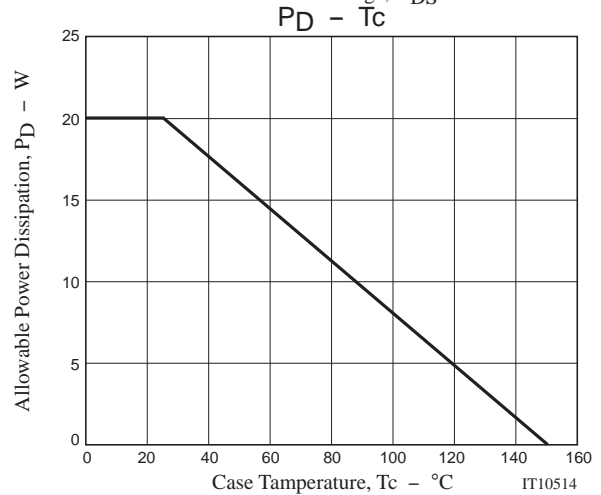
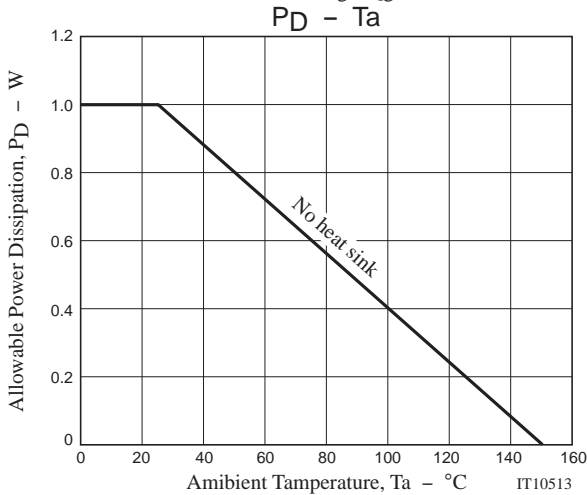
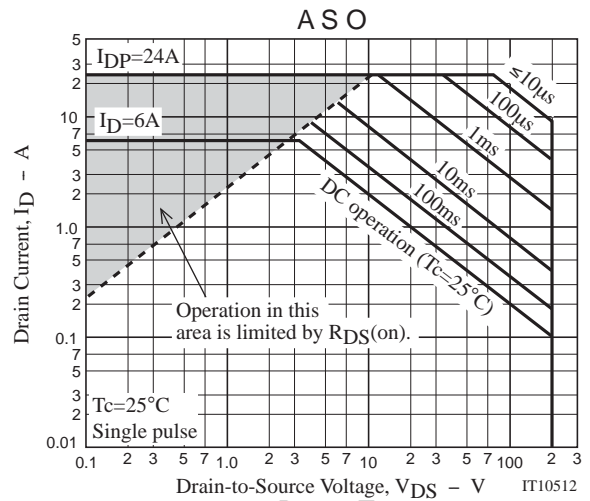
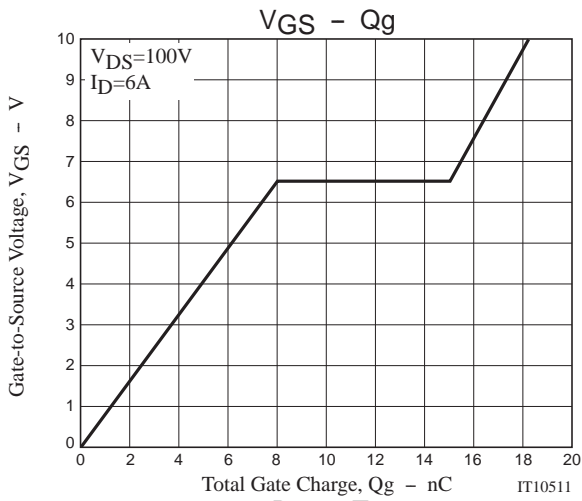
unit : mm (typ)  
7003-004



## Switching Time Test Circuit







Note on usage : Since the 2SK3979 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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