

DATA SHEET

2SK3980-

N-Channel Silicon MOSFET **General-Purpose Switching Device Applications**

Features

- · Low ON-resistance.
- · Ultrahigh-speed switching.
- 1.8V drive.

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	VDSS		60	V
Gate-to-Source Voltage	VGSS		±10	V
Drain Current (DC)	۱D		0.9	А
Drain Current (Pulse)	IDP	PW≤10µs, duty cycle≤1%	3.6	А
Allowable Power Dissipation	D-	Mounted on a ceramic board (250mm ² X0.8mm)	0.9	W
	PD	Tc=25°C	3.5	W
Channel Temperature	Tch		150	°C
Storage Temperature	Tstg		-55 to +150	°C

Electrical Characteristics at Ta=25°C

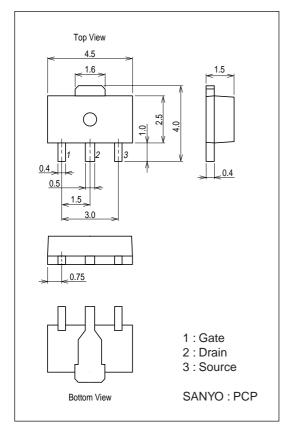
Bymbol BR)DSS IDSS IGSS GS(off)	Conditions ID=1mA, VGS=0V VDS=60V, VGS=0V VGS=±8V, VDS=0V	min 60	typ	max 1	Unit V
IDSS IGSS	V _{DS} =60V, V _{GS} =0V V _{GS} =±8V, V _{DS} =0V	60		1	-
IGSS	VGS=±8V, VDS=0V			1	•
					μA
GS(off)				±10	μΑ
	V _{DS} =10V, I _D =1mA	0.4		1.3	V
yfs	V _{DS} =10V, I _D =0.5A	0.9	1.5		S
)S(on)1	ID=0.5A, VGS=4V		635	830	mΩ
)S(on)2	ID=0.3A, VGS=2.5V		705	990	mΩ
)S(ou)3	ID=0.1A, VGS=1.8V		850	1310	mΩ
Ciss	VDS=20V, f=1MHz		100		pF
Coss	V _{DS} =20V, f=1MHz		9.5		pF
Crss	V _{DS} =20V, f=1MHz		6.7		pF
td(on)	See specified Test Circuit.		8.8		ns
tr	See specified Test Circuit.		10.5		ns
t _d (off)	See specified Test Circuit.		21.5		ns
tf	See specified Test Circuit.		15.8		ns
	$\begin{array}{c} S(on)1\\ S(on)2\\ S(on)3\\ Ciss\\ Coss\\ Crss\\ d(on)\\ t_r\\ d(off) \end{array}$	S(on)1 ID=0.5A, VGS=4V S(on)2 ID=0.3A, VGS=2.5V S(on)3 ID=0.1A, VGS=1.8V Ciss VDS=20V, f=1MHz Coss VDS=20V, f=1MHz Crss VDS=20V, f=1MHz (on) See specified Test Circuit. tr See specified Test Circuit. d(off) See specified Test Circuit.	S(on)1 ID=0.5A, VGS=4V S(on)2 ID=0.3A, VGS=2.5V S(on)3 ID=0.1A, VGS=1.8V Ciss VDS=20V, f=1MHz Coss VDS=20V, f=1MHz Crss VDS=20V, f=1MHz (on) See specified Test Circuit. tr See specified Test Circuit. d(off) See specified Test Circuit.	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	S(on)1 ID=0.5A, VGS=4V 635 830 S(on)2 ID=0.3A, VGS=2.5V 705 990 S(on)3 ID=0.1A, VGS=1.8V 850 1310 Ciss VDS=20V, f=1MHz 100 100 Coss VDS=20V, f=1MHz 9.5 100 Crss VDS=20V, f=1MHz 6.7 100 J(on) See specified Test Circuit. 8.8 10.5 tr See specified Test Circuit. 10.5 10.5 d(off) See specified Test Circuit. 21.5 10.5

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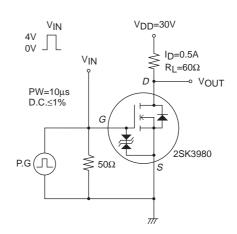
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Total Gate Charge	Qg	VDS=30V, VGS=4V, ID=0.9A		2.1		nC
Gate-to-Source Charge	Qgs	V _{DS} =30V, V _{GS} =4V, I _D =0.9A		0.39		nC
Gate-to-Drain "Miller" Charge	Qgd	VDS=30V, VGS=4V, ID=0.9A		0.28		nC
Diode Forward Voltage	VSD	IS=0.9A, VGS=0V		0.91	1.2	V

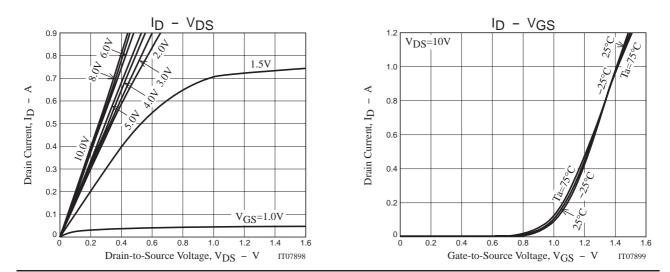
Package Dimensions

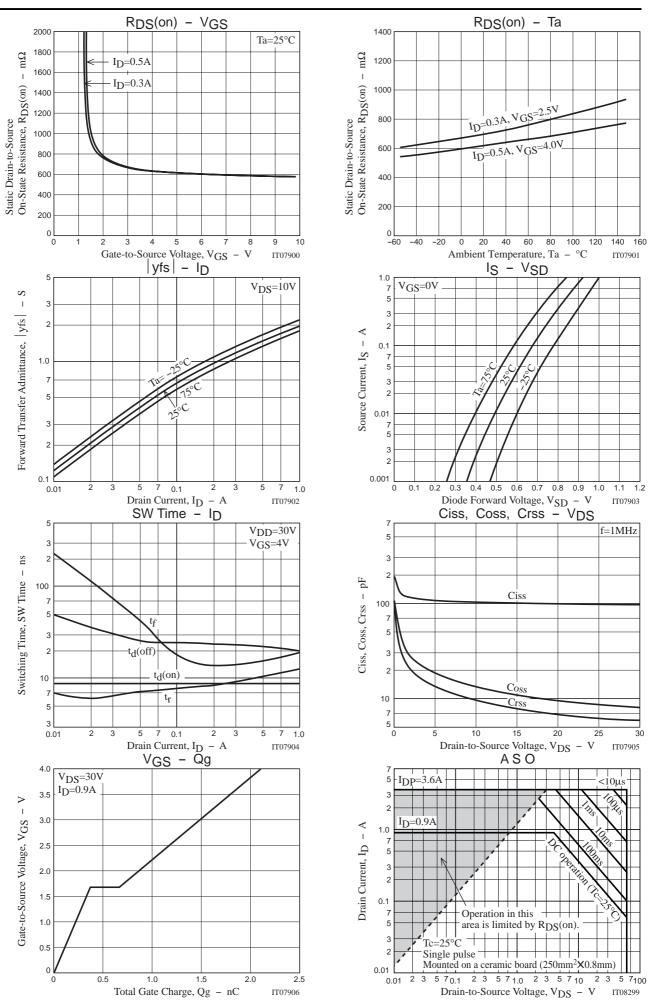
unit : mm (typ) 7007A-003

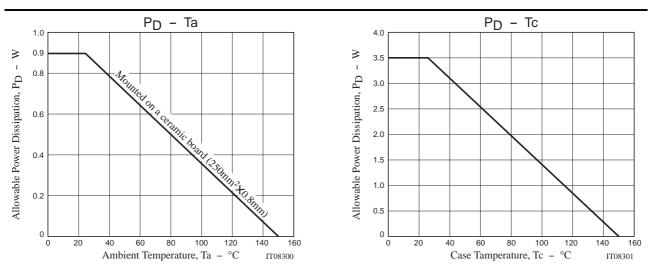


Switching Time Test Circuit









Note on usage : Since the 2SK3980 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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