



SANYO Semiconductors

DATA SHEET

N-Channel Silicon MOSFET

2SK4209 — General-Purpose Switching Device Applications

Features

- Low ON-resistance, ultrahigh-speed switching.
- Adoption of high reliability HVP process.
- Avalanche resistance guarantee.

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings		Unit
Drain-to-Source Voltage	V _{DSS}			800	V
Gate-to-Source Voltage	V _{GSS}			±30	V
Drain Current (DC)	I _D			12	A
Drain Current (Pulse)	I _{DP}	PW≤10μs, duty cycle≤1%		24	A
Allowable Power Dissipation	P _D			2.5	W
		T _c =25°C		190	W
Channel Temperature	T _{ch}			150	°C
Storage Temperature	T _{stg}			-55 to +150	°C
Avalanche Energy (Single Pulse) *1	E _A S			410	mJ
Avalanche Current *2	I _{AV}			12	A

Note : *1 V_{DD}=99V, L=5mH, I_{AV}=12A

*2 L≤5mH, Single pulse

Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	V _{(BR)DSS}	I _D =10mA, V _{GS} =0V	800			V
Zero-Gate Voltage Drain Current	I _{DSS}	V _D =640V, V _{GS} =0V			1.0	mA
Gate-to-Source Leakage Current	I _{GSS}	V _{GS} =±30V, V _D =0V			±100	nA
Cutoff Voltage	V _{GS(off)}	V _D =10V, I _D =1mA	2.0		4.0	V

Marking : K4209

Continued on next page.

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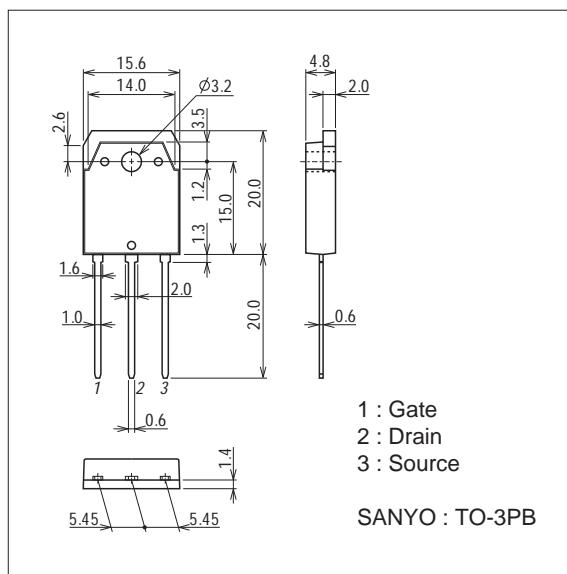
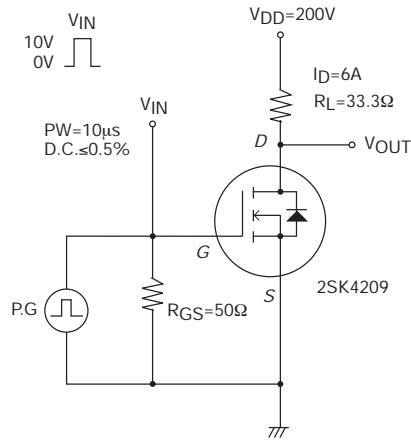
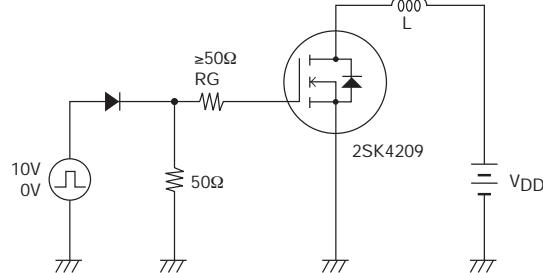
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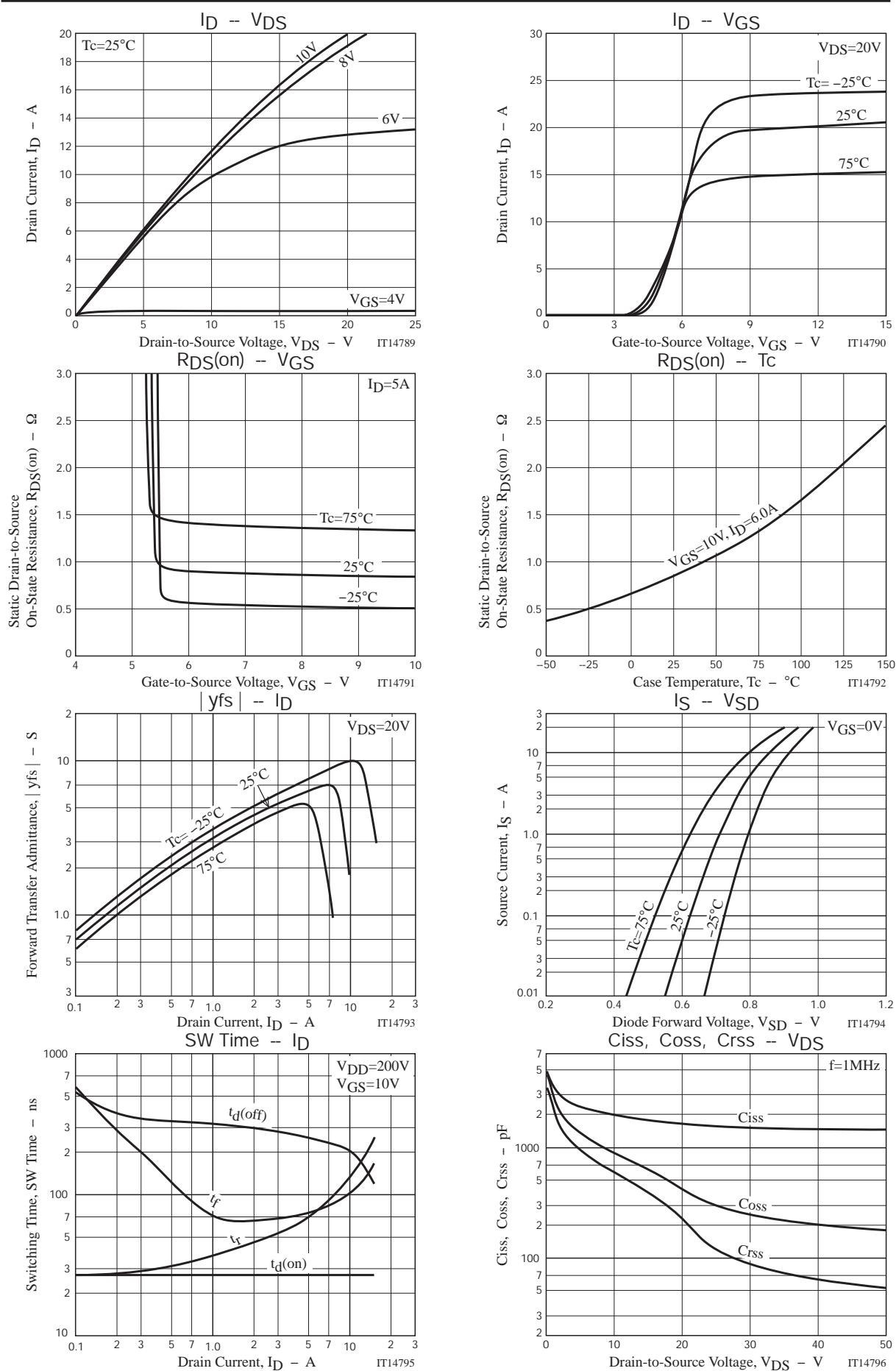
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Forward Transfer Admittance	yfs	V _{DS} =20V, I _D =6A	3.4	6.8		S
Static Drain-to-Source On-State Resistance	R _{DS(on)}	I _D =6A, V _{GS} =10V		0.83	1.08	Ω
Input Capacitance	C _{iss}	V _{DS} =30V, f=1MHz		1500		pF
Output Capacitance	C _{oss}	V _{DS} =30V, f=1MHz		250		pF
Reverse Transfer Capacitance	C _{rss}	V _{DS} =30V, f=1MHz		87		pF
Turn-ON Delay Time	t _{d(on)}	See specified Test Circuit.		27		ns
Rise Time	t _r	See specified Test Circuit.		72		ns
Turn-OFF Delay Time	t _{d(off)}	See specified Test Circuit.		260		ns
Fall Time	t _f	See specified Test Circuit.		77		ns
Total Gate Charge	Q _g	V _{DS} =200V, V _{GS} =10V, I _D =12A		75		nC
Gate-to-Source Charge	Q _{gs}	V _{DS} =200V, V _{GS} =10V, I _D =12A		12		nC
Gate-to-Drain "Miller" Charge	Q _{gd}	V _{DS} =200V, V _{GS} =10V, I _D =12A		38		nC
Diode Forward Voltage	V _{SD}	I _S =12A, V _{GS} =0V		0.85	1.2	V

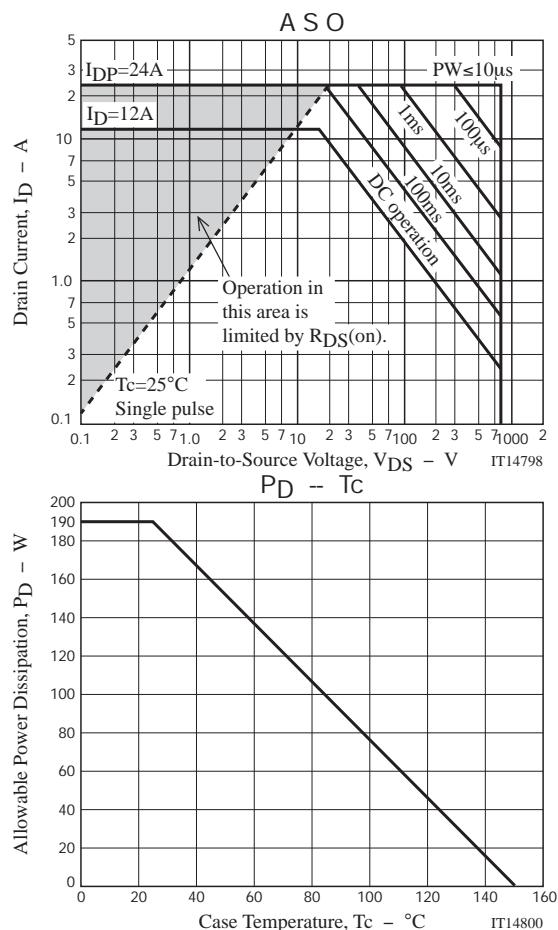
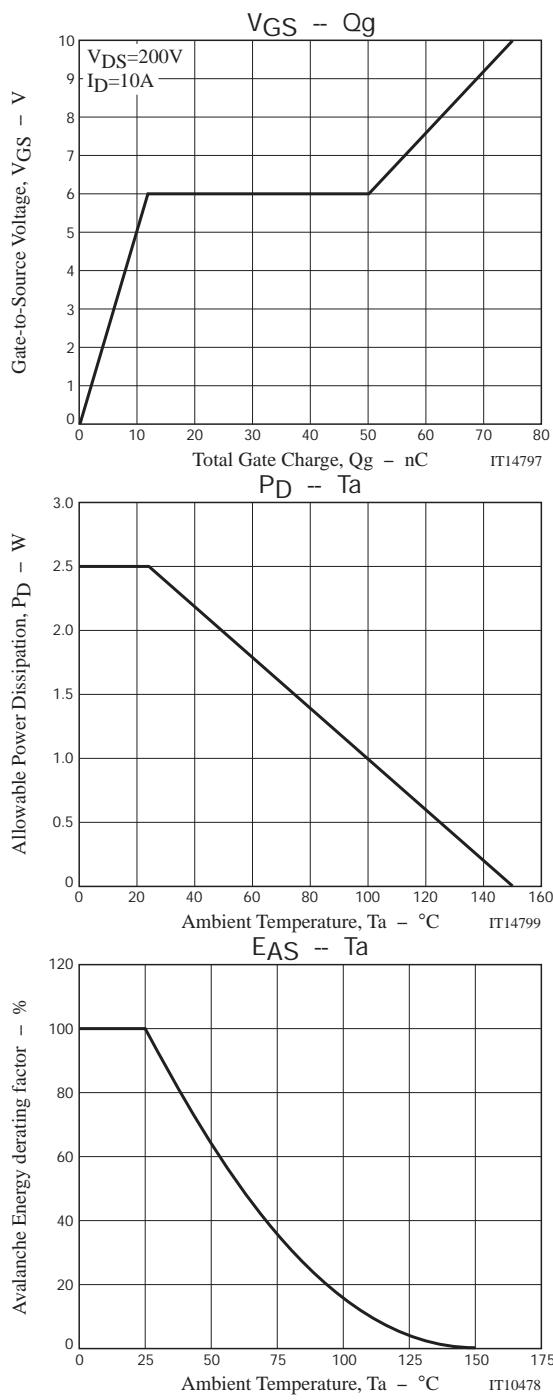
Package Dimensions

unit : mm (typ)

7503-004

**Switching Time Test Circuit****Avalanche Resistance Test Circuit**





Note on usage : Since the 2SK4209 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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