



SANYO Semiconductors

DATA SHEET

EC4409C — N-Channel Silicon MOSFET

General-Purpose Switching Device Applications

Features

- 1.5V drive.
- Halogen Free compliance (UL94 HB).

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V _{DSS}		30	V
Gate-to-Source Voltage	V _{GSS}		±10	V
Drain Current (DC)	I _D		0.35	A
Drain Current (Pulse)	I _{DP}	PW≤10μs, duty cycle≤1%	1.4	A
Allowable Power Dissipation	P _D	When mounted on glass epoxy substrate (145mmX80mmX1.6mm)	0.15	W
Channel Temperature	T _{ch}		150	°C
Storage Temperature	T _{stg}		-55 to +150	°C

Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	V _{(BR)DSS}	I _D =1mA, V _{GS} =0V	30			V
Zero-Gate Voltage Drain Current	I _{DSS}	V _{DS} =30V, V _{GS} =0V			1	μA
Gate-to-Source Leakage Current	I _{GSS}	V _{GS} =±8V, V _{DS} =0V			±10	μA
Cutoff Voltage	V _{GS(off)}	V _{DS} =10V, I _D =100μA	0.4		1.3	V
Forward Transfer Admittance	y _{fs}	V _{DS} =10V, I _D =200mA	360	600		mS
Static Drain-to-Source On-State Resistance	R _{DS(on)1}	I _D =200mA, V _{GS} =4V		0.75	1.0	Ω
	R _{DS(on)2}	I _D =100mA, V _{GS} =2.5V		0.9	1.3	Ω
	R _{DS(on)3}	I _D =10mA, V _{GS} =1.5V		1.8	3.6	Ω
Input Capacitance	C _{iss}	V _{DS} =10V, f=1MHz		28		pF
Output Capacitance	C _{oss}	V _{DS} =10V, f=1MHz		6.0		pF
Reverse Transfer Capacitance	C _{rss}	V _{DS} =10V, f=1MHz		3.1		pF

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EC4409C

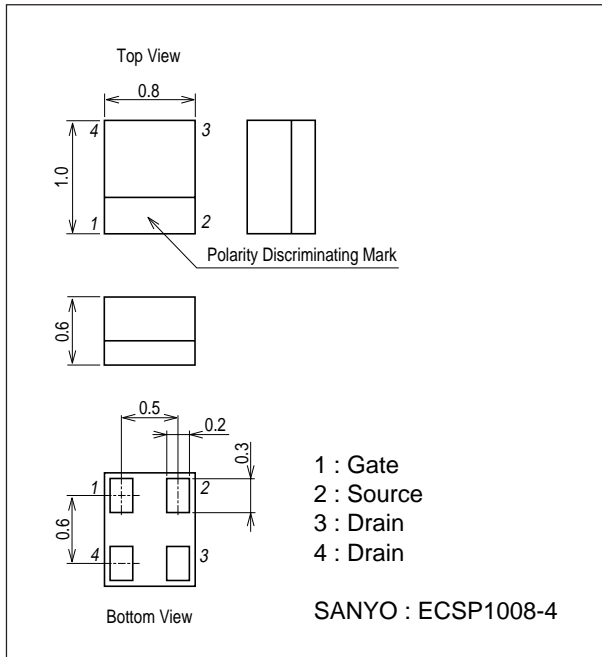
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit.		17.5		ns
Rise Time	t_r	See specified Test Circuit.		34.2		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit.		104		ns
Fall Time	t_f	See specified Test Circuit.		55.5		ns
Total Gate Charge	Q_g	$V_{DS}=10V, V_{GS}=4V, I_D=350mA$		0.87		nC
Gate-to-Source Charge	Q_{gs}	$V_{DS}=10V, V_{GS}=4V, I_D=350mA$		0.39		nC
Gate-to-Drain "Miller" Charge	Q_{gd}	$V_{DS}=10V, V_{GS}=4V, I_D=350mA$		0.14		nC
Diode Forward Voltage	V_{SD}	$I_S=350mA, V_{GS}=0V$		0.86	1.2	V

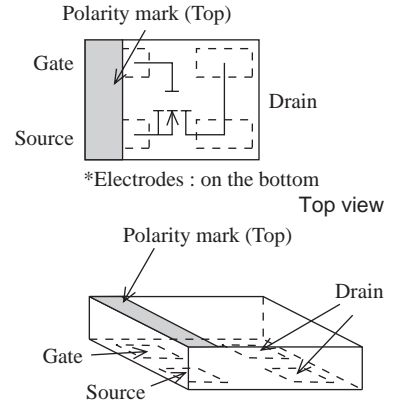
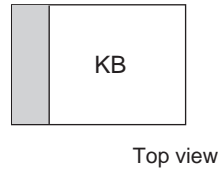
Package Dimensions

unit : mm (typ)

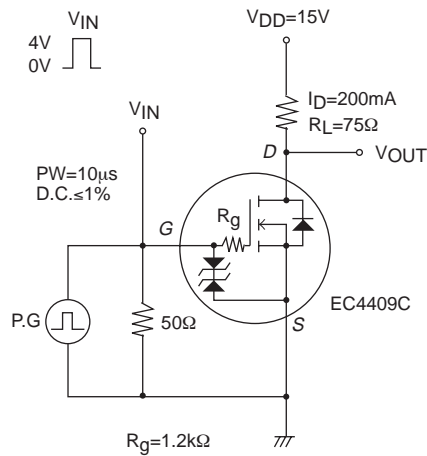
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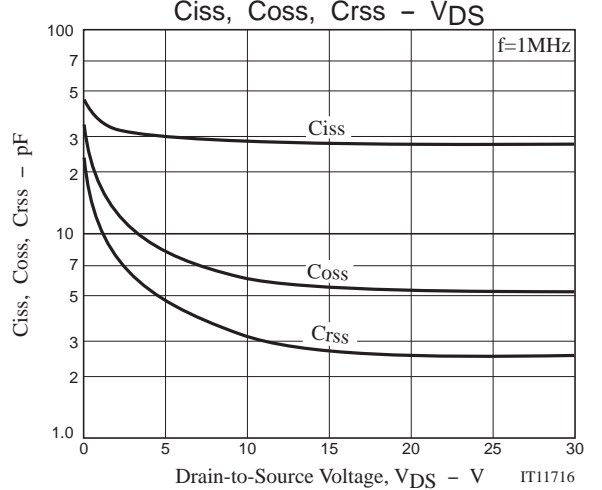
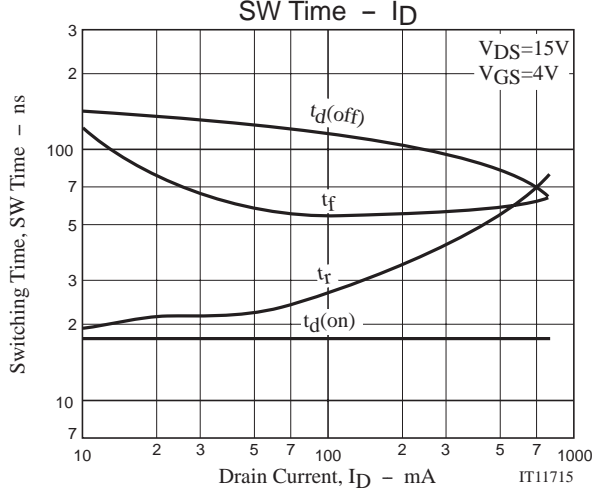
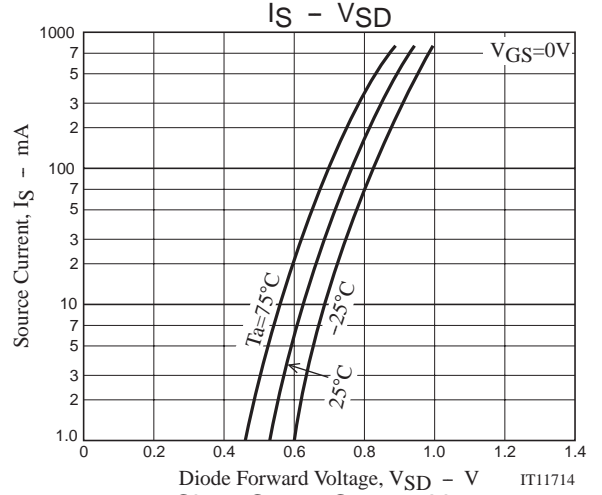
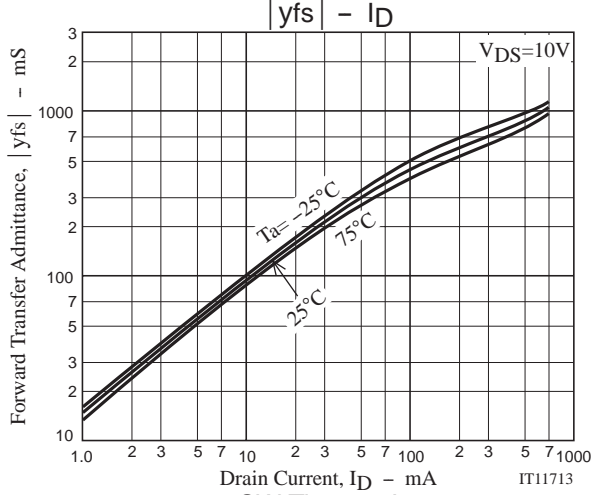
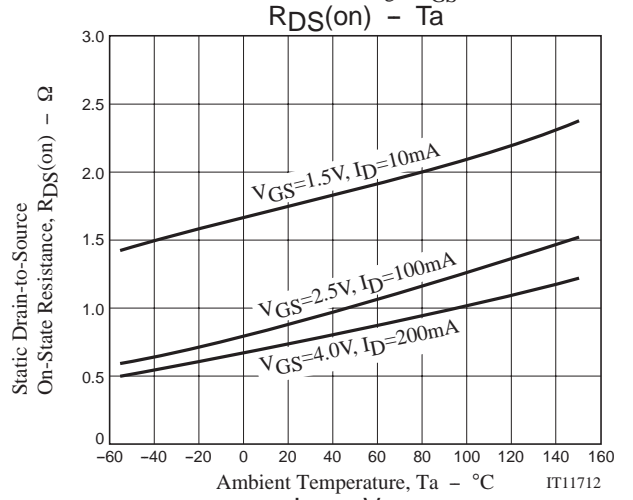
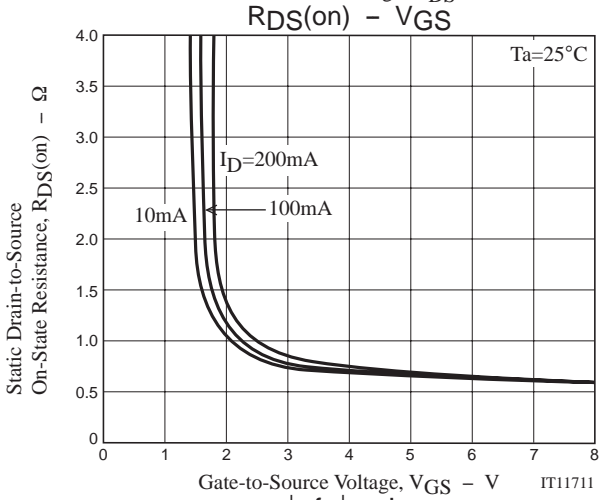
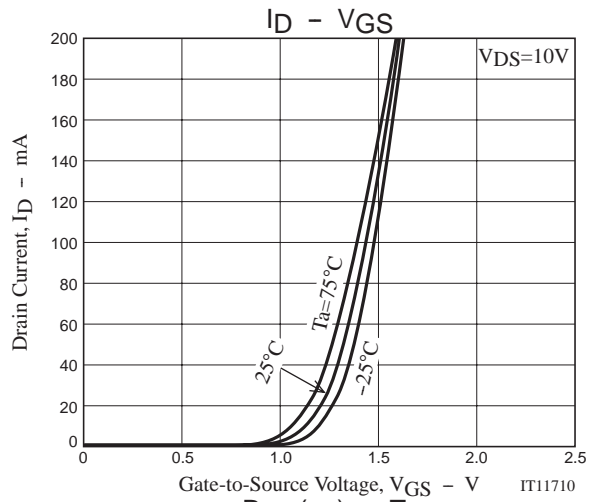
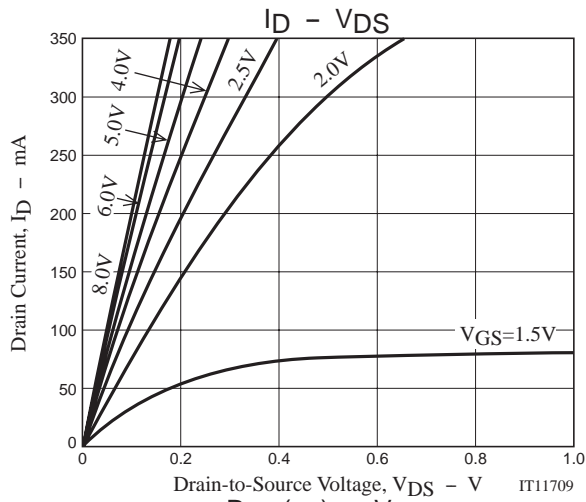
Type No. Indication Electrical Connection



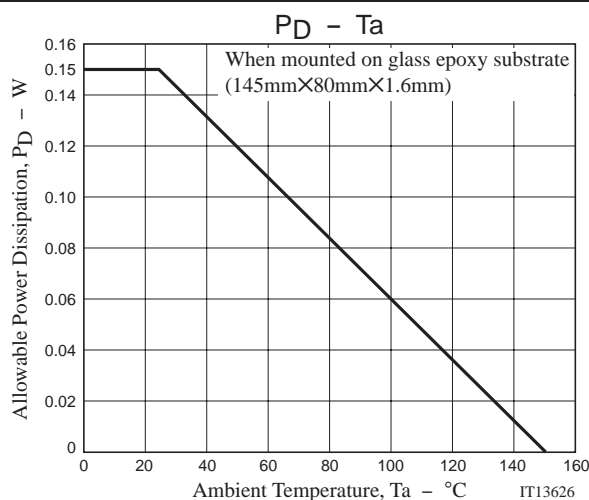
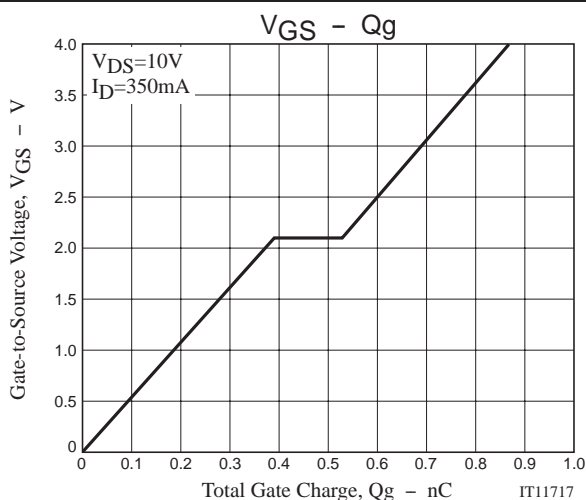
Switching Time Test Circuit



EC4409C



EC4409C



Note on usage : Since the EC4409C is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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