



SANYO Semiconductors

DATA SHEET

EC4405C — N-Channel Silicon MOSFET

General-Purpose Switching Device Applications

Features

- 4V 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}		±20	V
Drain Current (DC)	I _D		300	mA
Drain Current (Pulse)	I _{DP}	PW≤10μs, duty cycle≤1%	1.2	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} =±16V, V _{DS} =0V			±10	μA
Cutoff Voltage	V _{GS(off)}	V _{DS} =10V, I _D =100μA	1.2		2.6	V
Forward Transfer Admittance	y _{fs}	V _{DS} =10V, I _D =150mA	170	290		mS
Static Drain-to-Source On-State Resistance	R _{DS(on)1}	I _D =150mA, V _{GS} =10V		660	900	mΩ
	R _{DS(on)2}	I _D =80mA, V _{GS} =4V		1.5	2.2	Ω
Input Capacitance	C _{iss}	V _{DS} =10V, f=1MHz		22		pF
Output Capacitance	C _{oss}	V _{DS} =10V, f=1MHz		7.5		pF
Reverse Transfer Capacitance	C _{rss}	V _{DS} =10V, f=1MHz		3.6		pF

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EC4405C

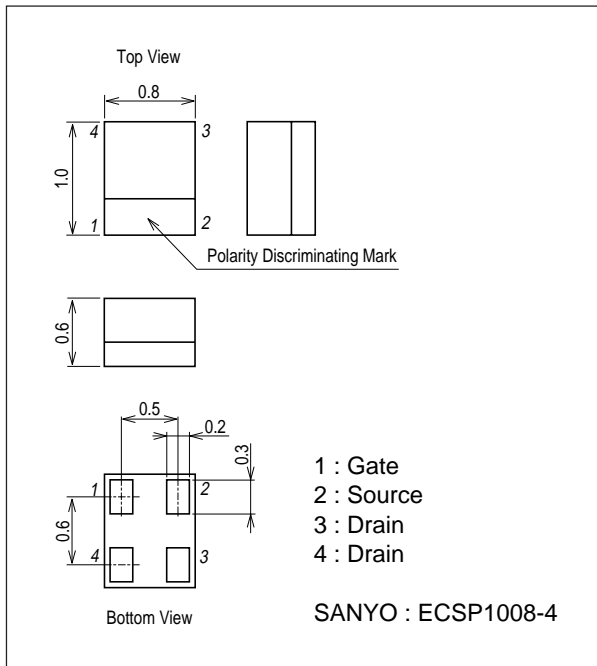
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit.		14		ns
Rise Time	t_r	See specified Test Circuit.		17.5		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit.		65		ns
Fall Time	t_f	See specified Test Circuit.		41		ns
Total Gate Charge	Q_g	$V_{DS}=10V, V_{GS}=10V, I_D=300mA$		1.68		nC
Gate-to-Source Charge	Q_{gs}	$V_{DS}=10V, V_{GS}=10V, I_D=300mA$		0.54		nC
Gate-to-Drain "Miller" Charge	Q_{gd}	$V_{DS}=10V, V_{GS}=10V, I_D=300mA$		0.12		nC
Diode Forward Voltage	V_{SD}	$I_S=300mA, V_{GS}=0V$		0.86	1.2	V

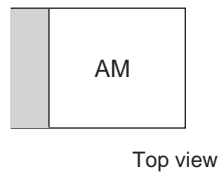
Package Dimensions

unit : mm (typ)

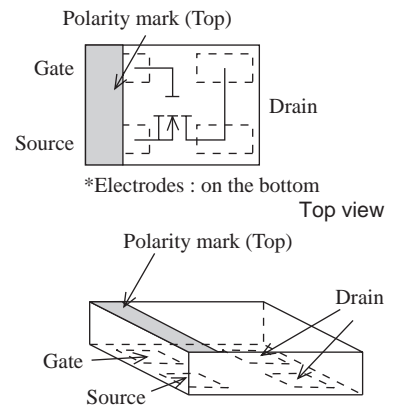
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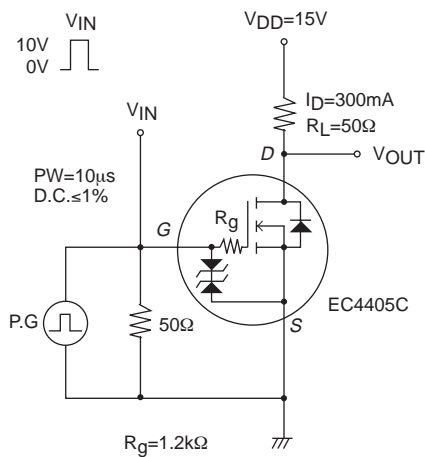
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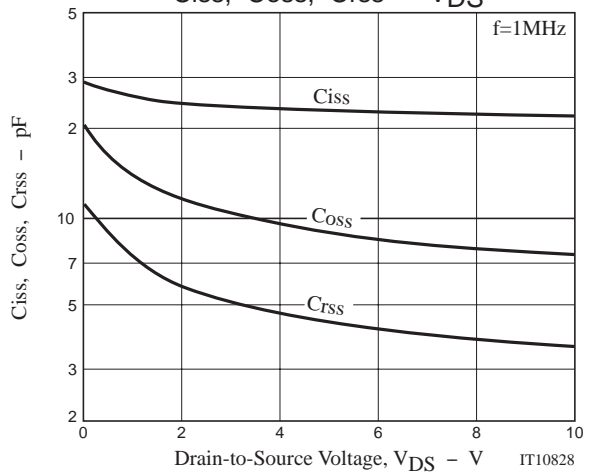
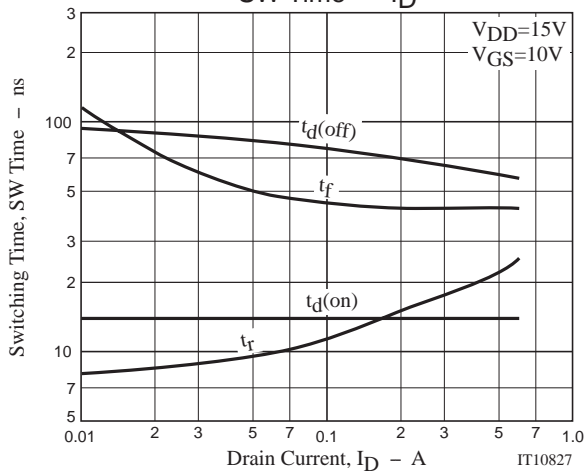
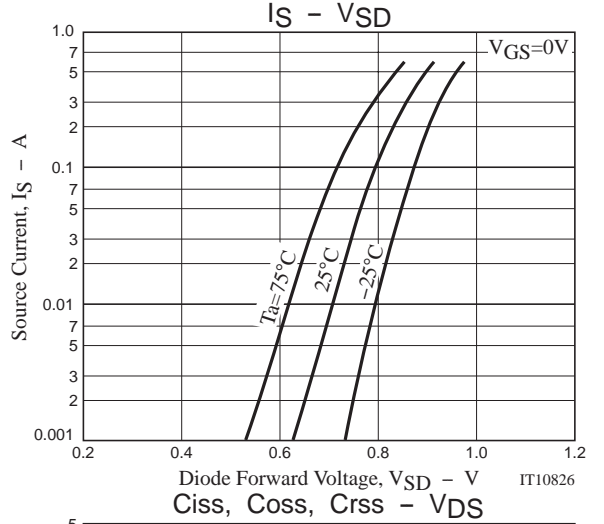
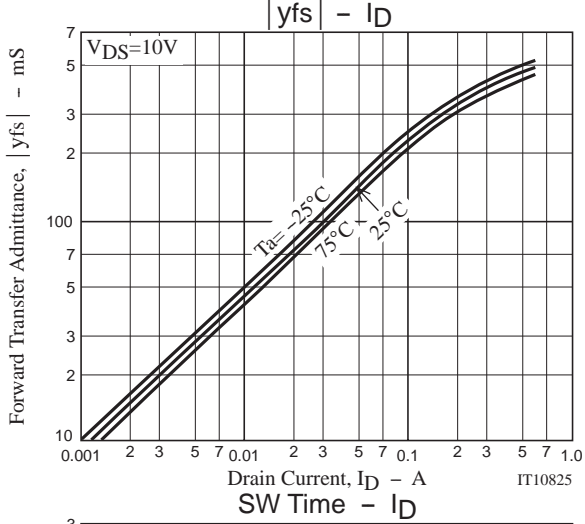
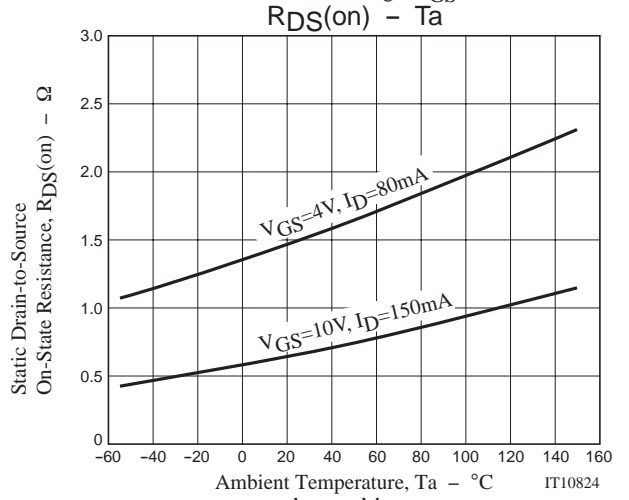
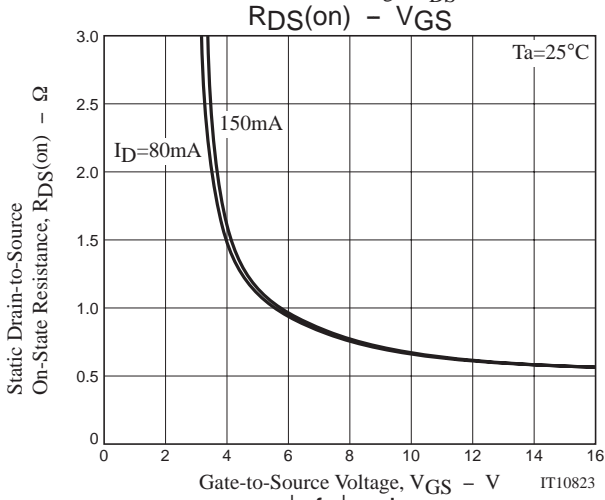
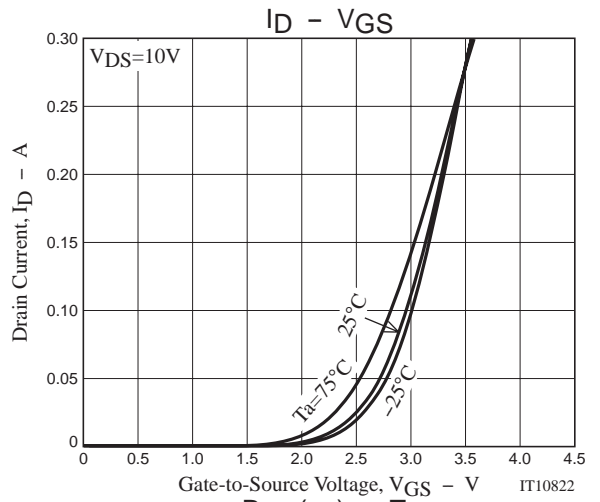
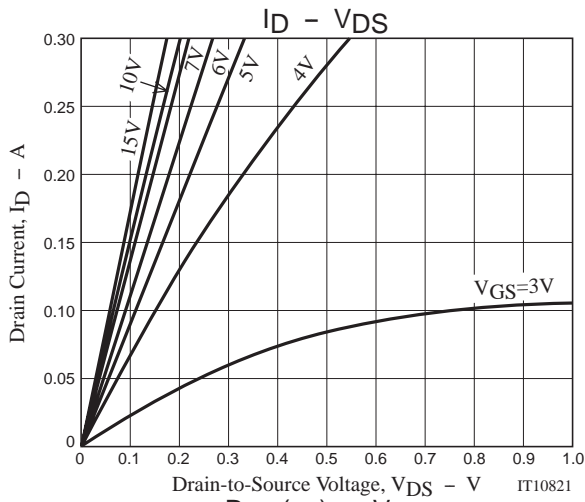
Electrical Connection



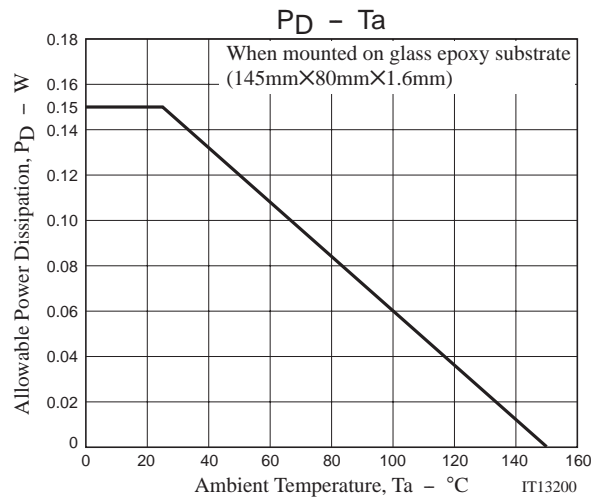
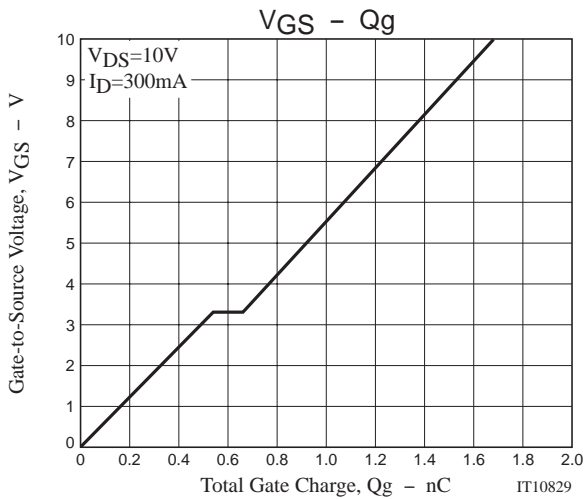
Switching Time Test Circuit



EC4405C



EC4405C



Note on usage : Since the EC4405C is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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