Ordering number : ENA1198

ON Semiconductor®

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DATA SHEET

N-Channel Silicon MOSFET

SCH2408 — General-Purpose Switching Device Applications

Features

- 1.5V drive.
- Composite type with 2 MOSFETs contained in a single package, facilitating high-density mounting.

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 ceramic substrate (900mm²×0.8mm) 1unit	0.6	W
Channel Temperature	Tch		150	°C
Storage Temperature	Tstg		–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	|yfs|	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	Ciss	V_{DS}=10V, f=1MHz		28		pF
Output Capacitance	Coss	V_{DS}=10V, f=1MHz		6.0		pF
Reverse Transfer Capacitance	Crss	V_{DS}=10V, f=1MHz		3.1		pF

Marking : LH

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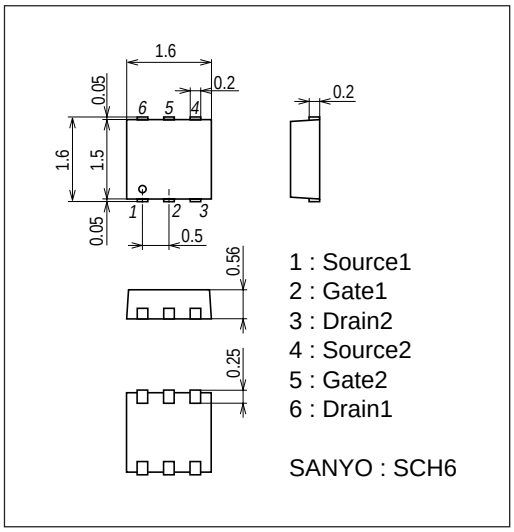
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit.		17.5		ns
Rise Time	t_r	See specified Test Circuit.		34.2		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit.		104		ns
Fall Time	t_f	See specified Test Circuit.		55.5		ns
Total Gate Charge	Qg	V_{DS}=10V, V_{GS}=4V, I_D=350mA		0.87		nC
Gate-to-Source Charge	Qgs	V_{DS}=10V, V_{GS}=4V, I_D=350mA		0.39		nC
Gate-to-Drain “Miller” Charge	Qgd	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

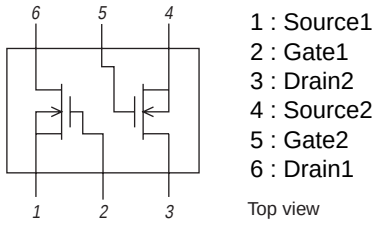
Package Dimensions

unit : mm (typ)

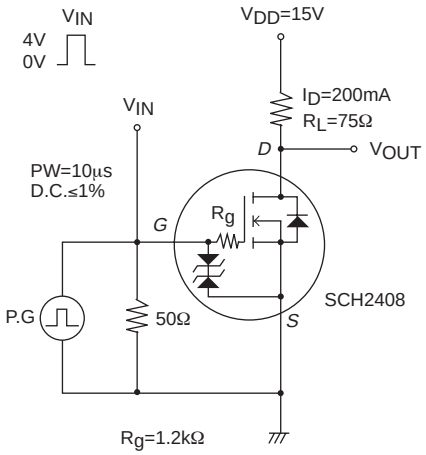
7028-006

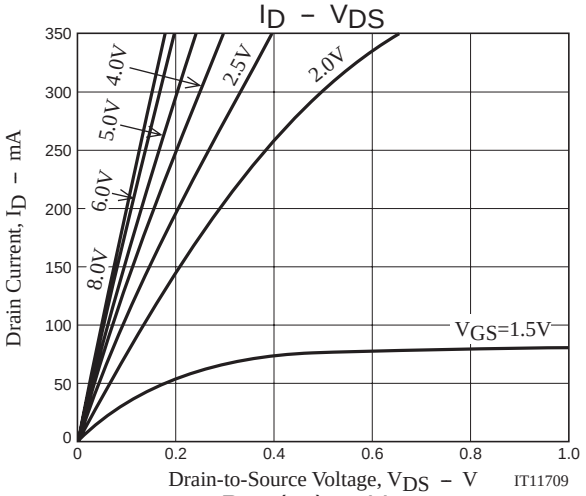


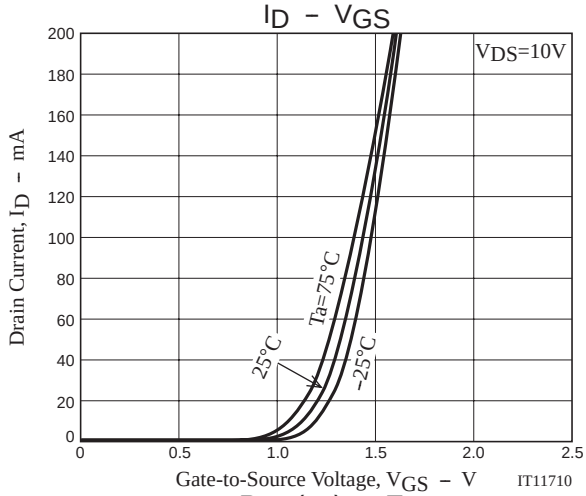
Electrical Connection

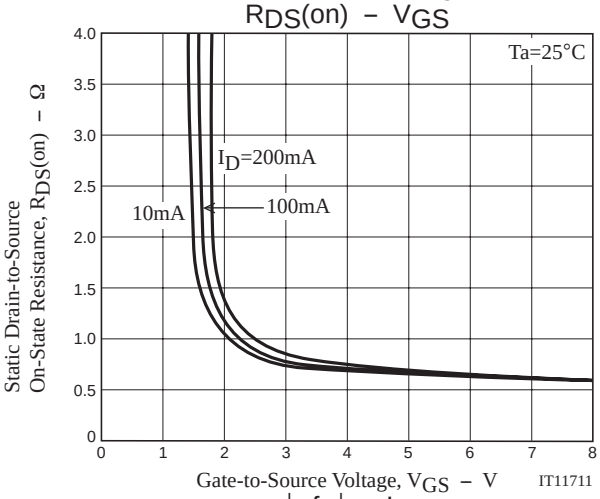


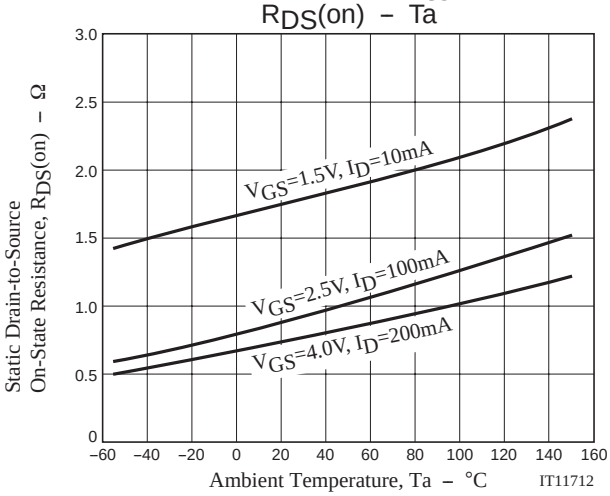
Switching Time Test Circuit

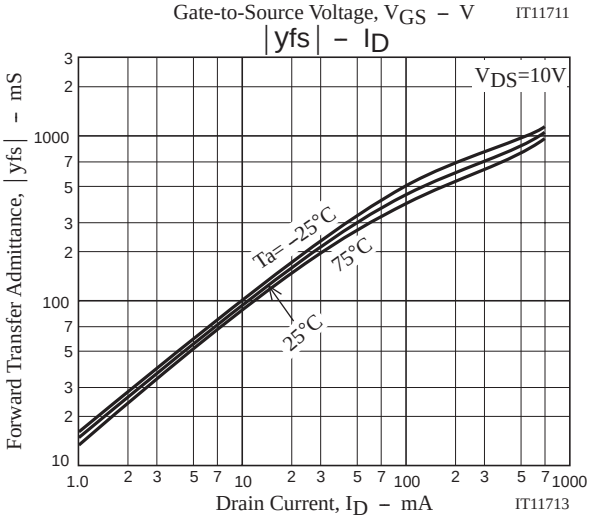


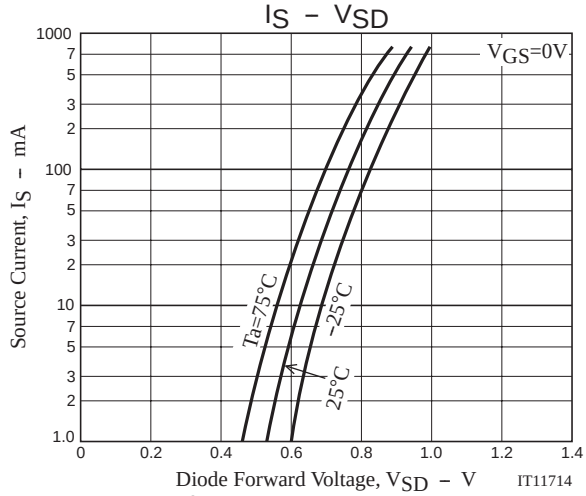

ID – VDS
Drain Current, ID – mA
Drain-to-Source Voltage, VDS – V
IT11709
4.0V
5.0V
6.0V
8.0V
2.5V
2.0V
VGS=1.5V

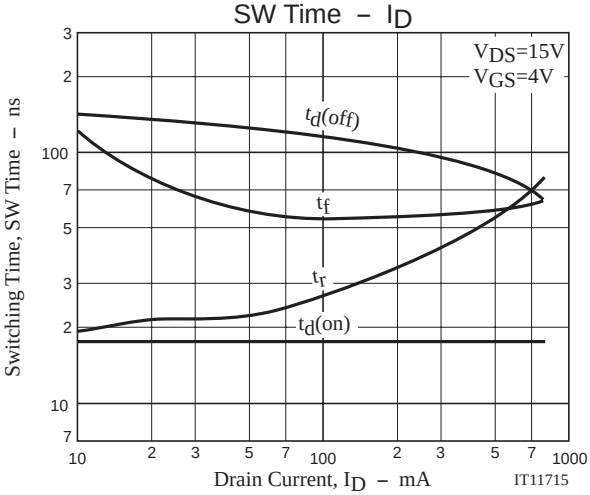

ID – VGS
Drain Current, ID – mA
Gate-to-Source Voltage, VGS – V
IT11710
VDS=10V
Ta=75°C
25°C
–25°C

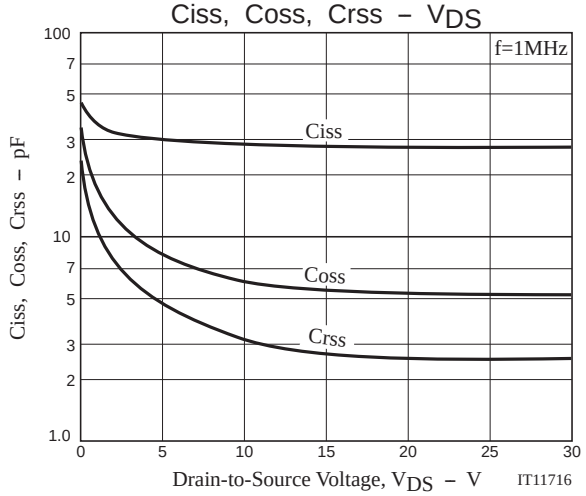

RDS(on) – VGS
Static Drain-to-Source On-State Resistance, RDS(on) – Ω
Gate-to-Source Voltage, VGS – V
IT11711
Ta=25°C
ID=200mA
100mA
10mA

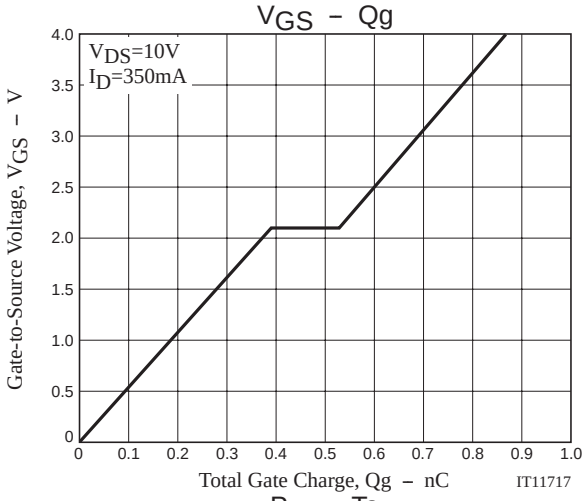

RDS(on) – Ta
Static Drain-to-Source On-State Resistance, RDS(on) – Ω
Ambient Temperature, Ta – °C
IT11712
VGS=1.5V, ID=10mA
VGS=2.5V, ID=100mA
VGS=4.0V, ID=200mA

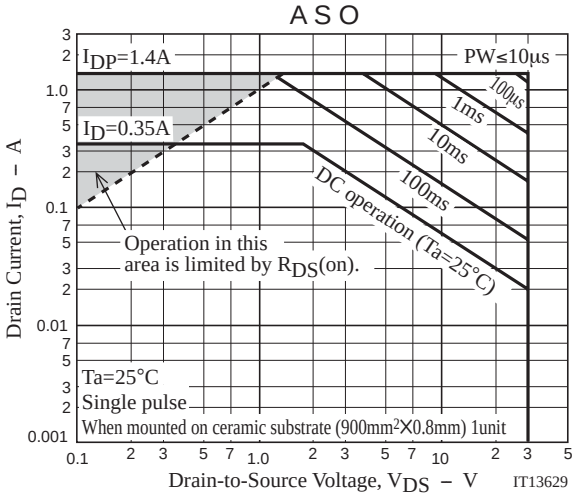

|yfs| – ID
Forward Transfer Admittance, |yfs| – mS
Drain Current, ID – mA
IT11713
VDS=10V
Ta=–25°C
75°C
25°C

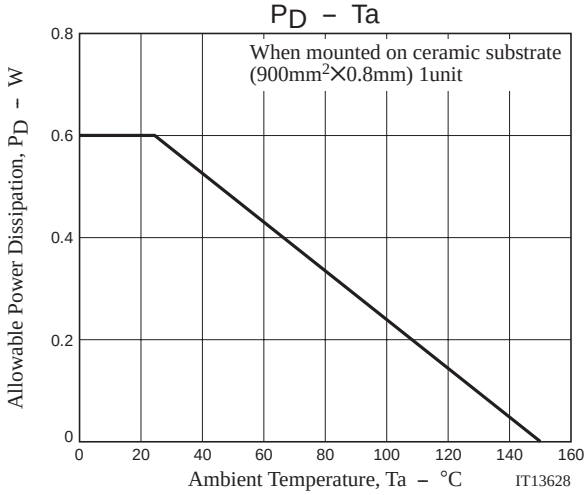

IS – VSD
Source Current, IS – mA
Diode Forward Voltage, VSD – V
IT11714
VGS=0V
Ta=75°C
–25°C
25°C


SW Time – ID
Switching Time, SW Time – ns
Drain Current, ID – mA
IT11715
VDS=15V
VGS=4V
td(off)
tf
tr
td(on)


Ciss, Coss, Crss – VDS
Ciss, Coss, Crss – pF
Drain-to-Source Voltage, VDS – V
IT11716
f=1MHz
Ciss
Coss
Crss







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