Ordering number : ENA1867C

SCH1337

P-Channel Power MOSFET
−30V, −2A, 150mΩ, Single SCH6

ON Semiconductor®
http://onsemi.com

Features

- ON-resistance $R_{DS}(on)1$=115mΩ(typ.)
- 4V drive
- Halogen free compliance

Specifications

Absolute Maximum Ratings at Ta=25°C

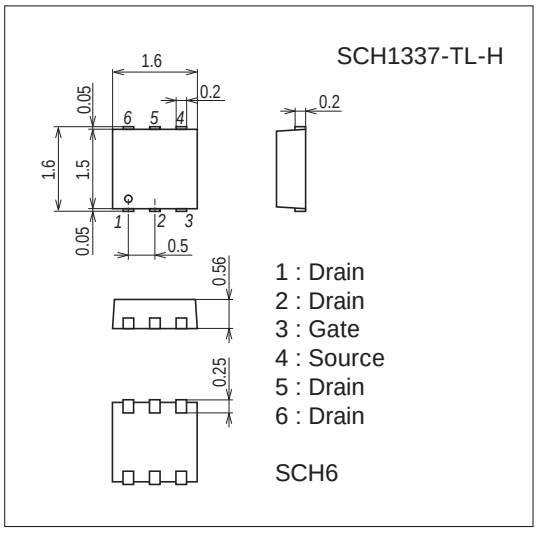
Parameter	Symbol	Conditions	Ratings	Unit
Drain to Source Voltage	V_{DSS}		−30	V
Gate to Source Voltage	V_{GSS}		±20	V
Drain Current (DC)	I_D		−2	A
Drain Current (Pulse)	I_{DP}	PW≤10μs, duty cycle≤1%	−8	A
Allowable Power Dissipation	P_D	When mounted on ceramic substrate (900mm²×0.8mm)	0.8	W
Channel Temperature	Tch		150	°C
Storage Temperature	Tstg		−55 to +150	°C

This product is designed to "ESD immunity < 200V*", so please take care when handling.
* Machine Model

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

Package Dimensions

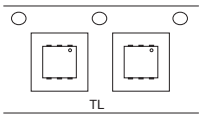
unit : mm (typ)
7028-002



Product & Package Information

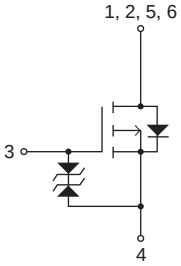
- Package : SCH6
- JEITA, JEDEC : SOT-563
- Minimum Packing Quantity : 5,000 pcs./reel

Packing Type : TL



Marking

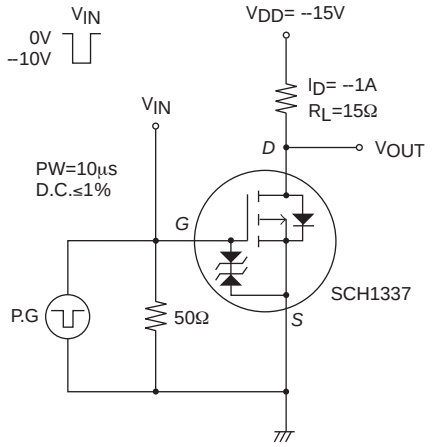
Electrical Connection



Electrical Characteristics at Ta=25°C

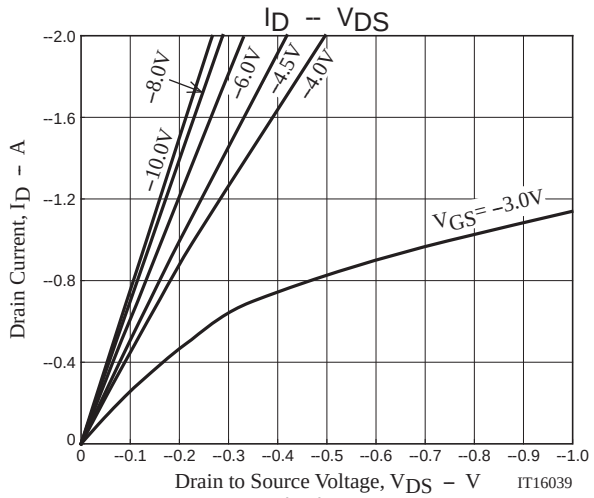
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain to Source Breakdown Voltage	$V_{(BR)DSS}$	I_D=−1mA, V_{GS}=0V	−30			V
Zero-Gate Voltage Drain Current	I_{DSS}	V_{DS}=−30V, V_{GS}=0V			−1	μA
Gate to Source Leakage Current	I_{GSS}	V_{GS}=±16V, V_{DS}=0V			±10	μA
Cutoff Voltage	V_{GS}(off)	V_{DS}=−10V, I_D=−1mA	−1.2		−2.6	V
Forward Transfer Admittance	| yfs |	V_{DS}=−10V, I_D=−1A		1.9		S
Static Drain to Source On-State Resistance	R_{DS}(on)1	I_D=−1A, V_{GS}=−10V		115	150	mΩ
	R_{DS}(on)2	I_D=−0.5A, V_{GS}=−4.5V		182	255	mΩ
	R_{DS}(on)3	I_D=−0.5A, V_{GS}=−4V		208	292	mΩ
Input Capacitance	Ciss	V_{DS}=−10V, f=1MHz		172		pF
Output Capacitance	Coss			51		pF
Reverse Transfer Capacitance	Crss			36		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit.		4.5		ns
Rise Time	t_r			4.2		ns
Turn-OFF Delay Time	$t_{d(off)}$			20		ns
Fall Time	t_f			10.6		ns
Total Gate Charge	Qg	V_{DS}=−15V, V_{GS}=−10V, I_D=−2A		3.9		nC
Gate to Source Charge	Qgs			0.6		nC
Gate to Drain “Miller” Charge	Qgd			0.8		nC
Diode Forward Voltage	V_{SD}	I_S=−2A, V_{GS}=0V		−0.86	−1.5	V

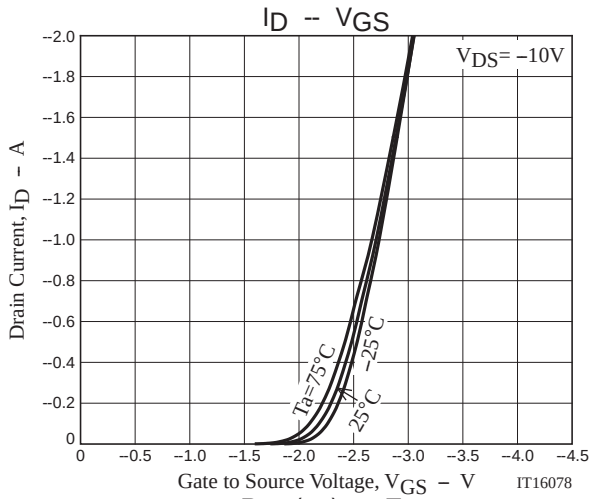
Switching Time Test Circuit

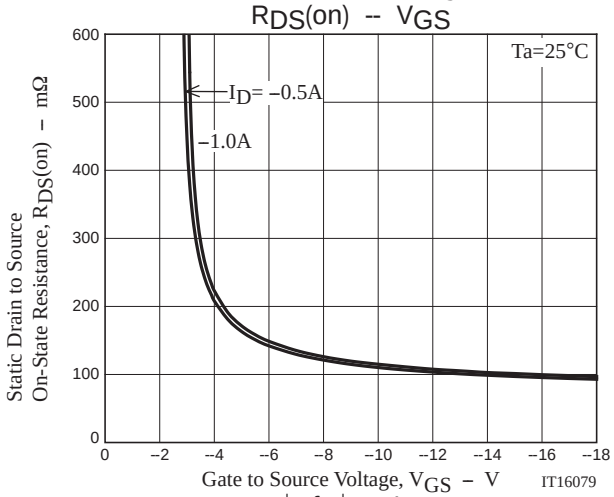


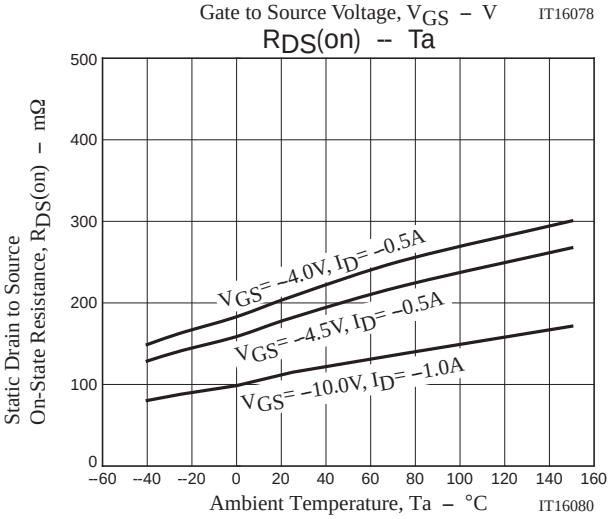
Ordering Information

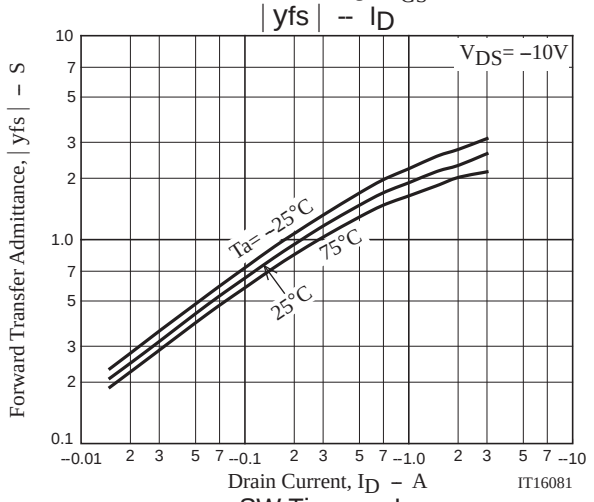
Device	Package	Shipping	memo
SCH1337-TL-H	SCH6	5,000pcs./reel	Pb-Free and Halogen Free

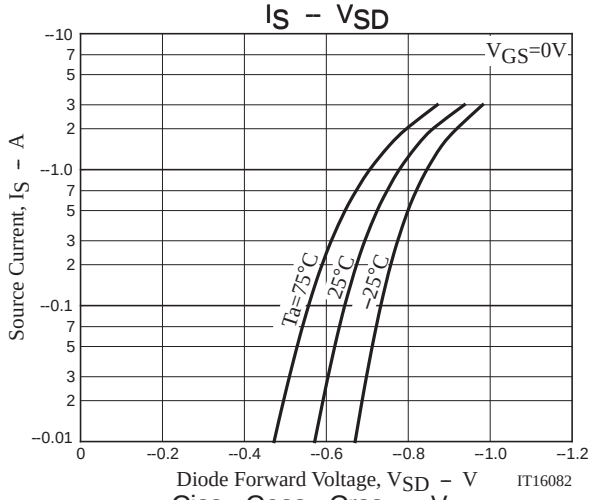

ID -- VDS
Drain Current, ID – A
Drain to Source Voltage, VDS – V
IT16039
–8.0V
–6.0V
–4.5V
–4.0V
–10.0V
VGS= –3.0V

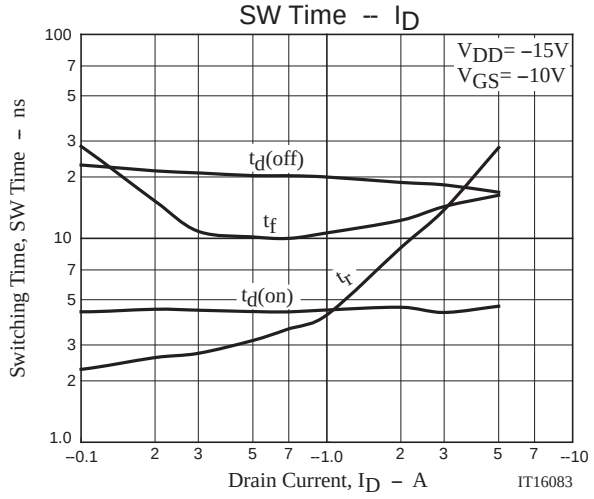

ID -- VGS
Drain Current, ID – A
Gate to Source Voltage, VGS – V
IT16078
VDS= –10V
Ta=75°C
–25°C
25°C

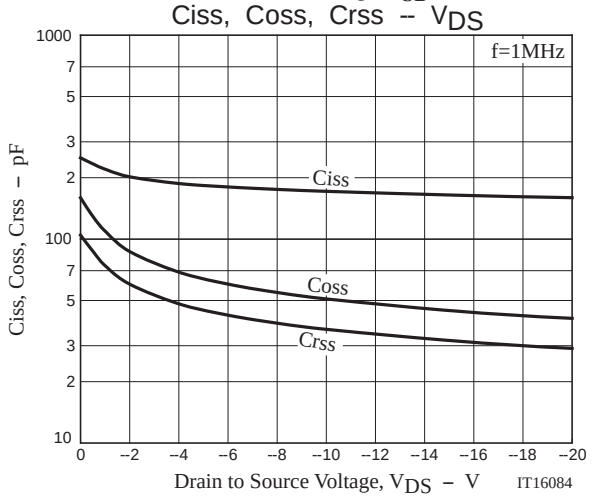

RDS(on) -- VGS
Static Drain to Source On-State Resistance, RDS(on) – mΩ
Gate to Source Voltage, VGS – V
IT16079
Ta=25°C
ID= –0.5A
–1.0A

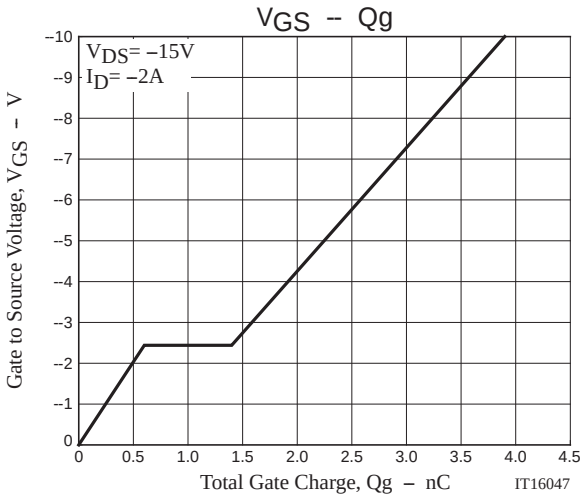

RDS(on) -- Ta
Static Drain to Source On-State Resistance, RDS(on) – mΩ
Ambient Temperature, Ta – °C
IT16080
VGS= –4.0V, ID= –0.5A
VGS= –4.5V, ID= –0.5A
VGS= –10.0V, ID= –1.0A

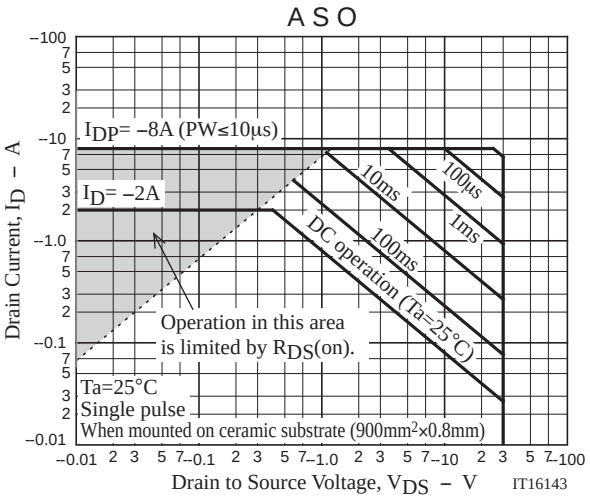

| yfs | -- ID
Forward Transfer Admittance, | yfs | – S
Drain Current, ID – A
IT16081
VDS= –10V
Ta= –25°C
75°C
25°C

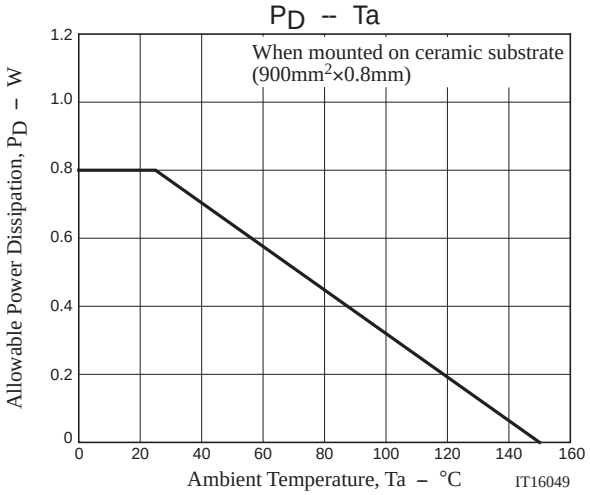

IS – VSD
Source Current, IS – A
Diode Forward Voltage, VSD – V
IT16082
VGS=0V
Ta=75°C
25°C
–25°C


SW Time -- ID
Switching Time, SW Time – ns
Drain Current, ID – A
IT16083
VDD= –15V
VGS= –10V
td(off)
tf
tr
td(on)


Ciss, Coss, Crss -- VDS
Ciss, Coss, Crss – pF
Drain to Source Voltage, VDS – V
IT16084
f=1MHz
Ciss
Coss
Crss

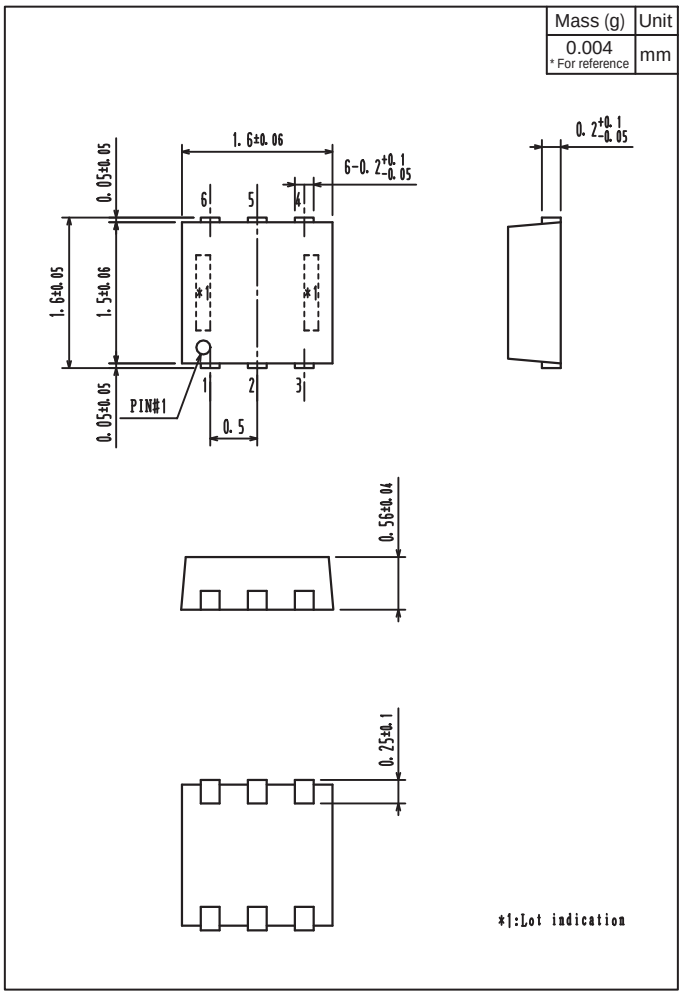

VGS – Qg
VDS= –15V
ID= –2A
Gate to Source Voltage, VGS – V
Total Gate Charge, Qg – nC
IT16047


A S O
IDP= –8A (PW≤10μs)
ID= –2A
10ms
100μs
1ms
100ms
DC operation (Ta=25°C)
Operation in this area
is limited by RDS(on).
Ta=25°C
Single pulse
When mounted on ceramic substrate (900mm2×0.8mm)
Drain Current, ID – A
Drain to Source Voltage, VDS – V
IT16143

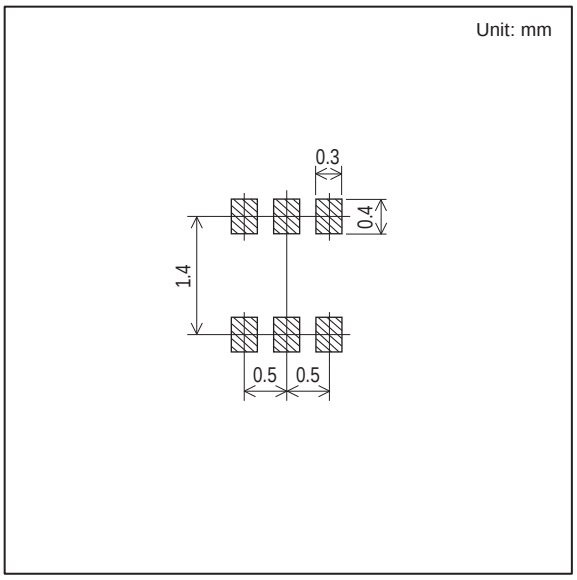

PD – Ta
When mounted on ceramic substrate
(900mm2×0.8mm)
Allowable Power Dissipation, PD – W
Ambient Temperature, Ta – °C
IT16049

Outline Drawing

SCH1337-TL-H



Land Pattern Example



Note on usage : Since the SCH1337 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.