Ordering number : ENA0151

SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

P-Channel Silicon MOSFET

CPH3350 — General-Purpose Switching Device Applications

Features

- Ultrahigh-speed switching
- 1.8V drive
- Halogen free compliance

Specifications

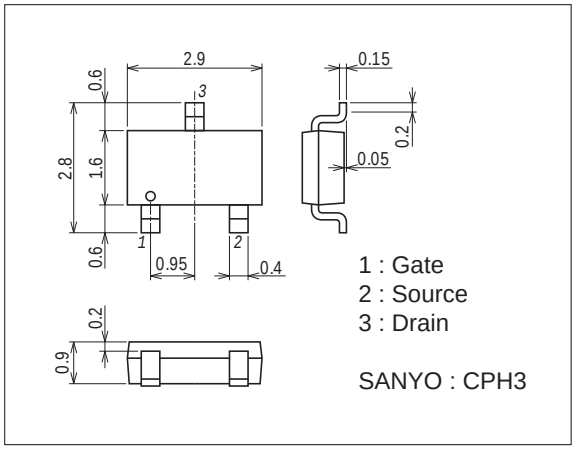
Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSS}		−20	V
Gate-to-Source Voltage	V_{GSS}		±10	V
Drain Current (DC)	I_D		−3	A
Drain Current (Pulse)	I_{DP}	PW≤10μs, duty cycle≤1%	−12	A
Allowable Power Dissipation	P_D	When mounted on ceramic substrate (900mm²×0.8mm)	1.0	W
Channel Temperature	Tch		150	°C
Storage Temperature	Tstg		−55 to +150	°C

Package Dimensions

unit : mm (typ)

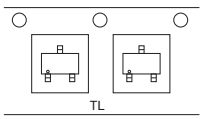
7015A-004



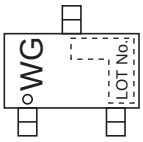
Product & Package Information

- Package : CPH3
- JEITA, JEDEC : SC-59, TO-236, SOT-23
- Minimum Packing Quantity : 3,000 pcs./reel

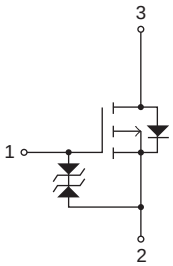
Packing Type: TL



Marking



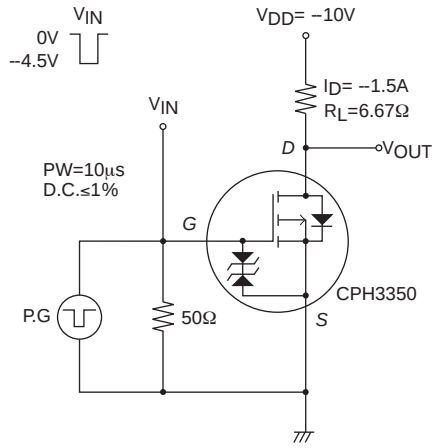
Electrical Connection

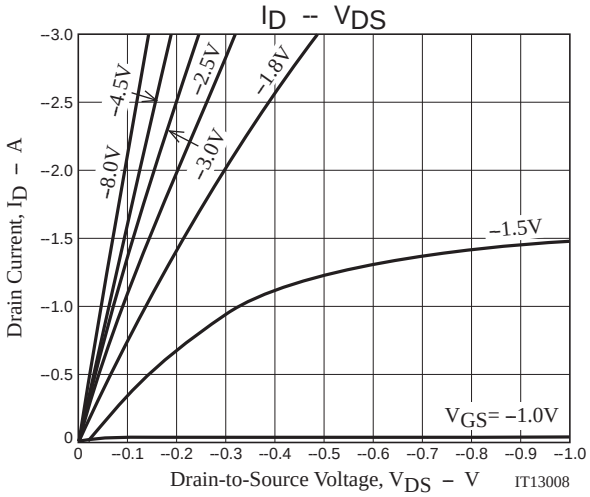


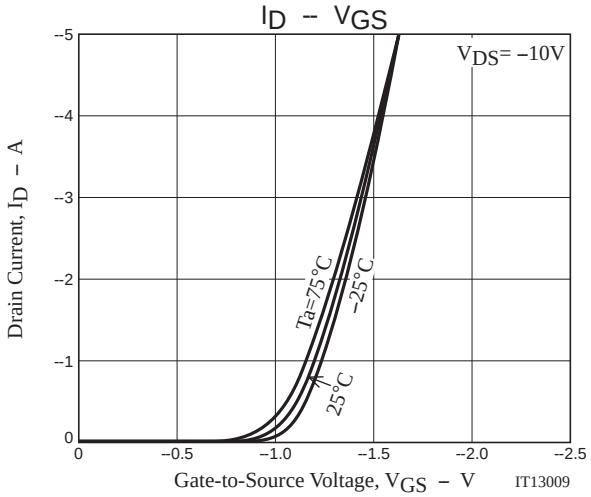
Electrical Characteristics at Ta=25°C

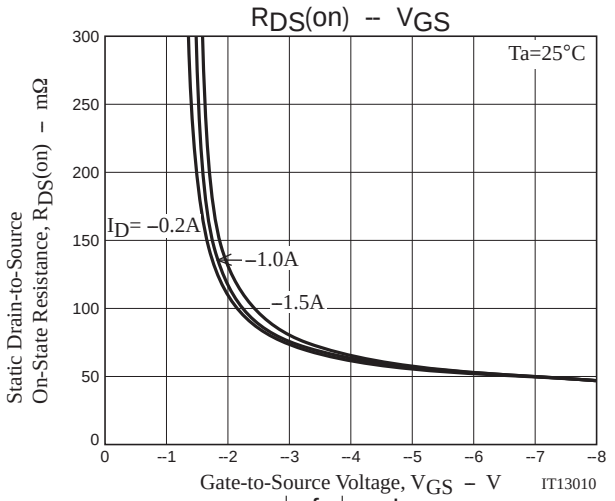
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	I_D=−1mA, V_{GS}=0V	−20			V
Zero-Gate Voltage Drain Current	I_{DSS}	V_{DS}=−20V, V_{GS}=0V			−1	μA
Gate-to-Source Leakage Current	I_{GSS}	V_{GS}=±8V, V_{DS}=0V			±10	μA
Cutoff Voltage	V_{GS}(off)	V_{DS}=−10V, I_D=−1mA	−0.4		−1.3	V
Forward Transfer Admittance	| yfs |	V_{DS}=−10V, I_D=−1.5A		4.3		S
Static Drain-to-Source On-State Resistance	R_{DS}(on)1	I_D=−1.5A, V_{GS}=−4.5V		64	83	mΩ
	R_{DS}(on)2	I_D=−1A, V_{GS}=−2.5V		89	124	mΩ
	R_{DS}(on)3	I_D=−0.2A, V_{GS}=−1.8V		131	196	mΩ
Input Capacitance	Ciss	V_{DS}=−10V, f=1MHz		375		pF
Output Capacitance	Coss			77		pF
Reverse Transfer Capacitance	Crss			58		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit.		8.1		ns
Rise Time	t_r			26		ns
Turn-OFF Delay Time	$t_{d(off)}$			42		ns
Fall Time	t_f			37		ns
Total Gate Charge	Qg	V_{DS}=−10V, V_{GS}=−4.5V, I_D=−3A		4.6		nC
Gate-to-Source Charge	Qgs			0.8		nC
Gate-to-Drain “Miller” Charge	Qgd			1.3		nC
Diode Forward Voltage	V_{SD}	I_S=−3A, V_{GS}=0V		−0.83	−1.2	V

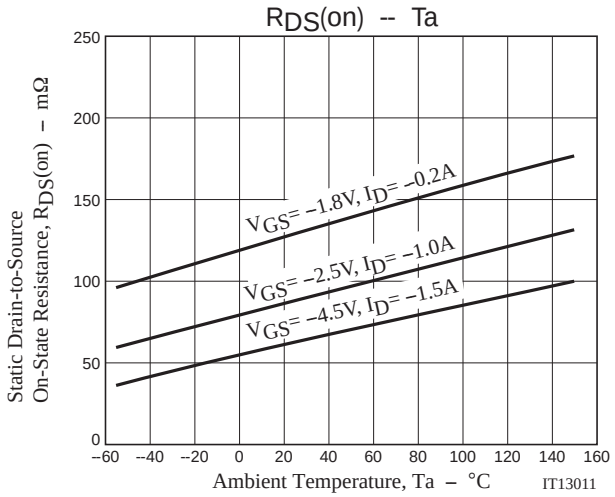
Switching Time Test Circuit

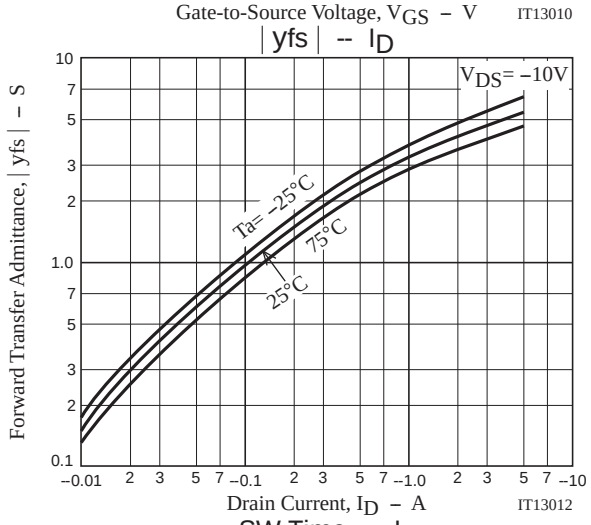


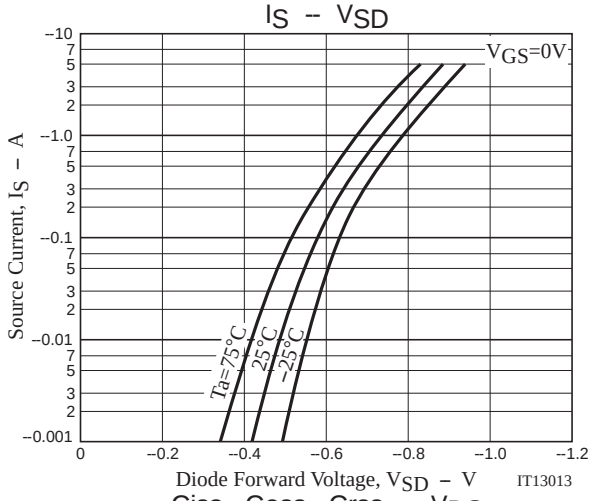


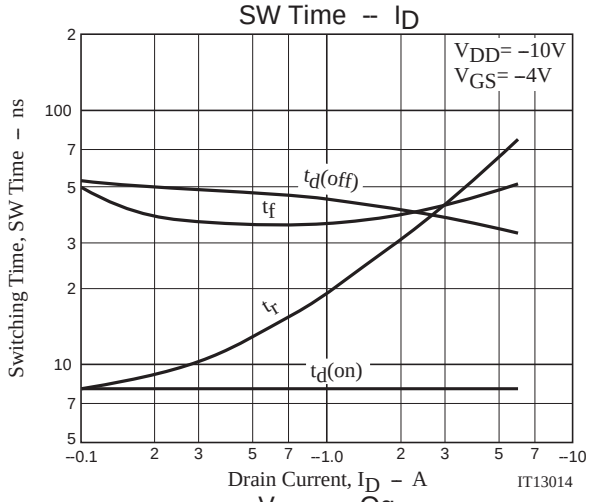


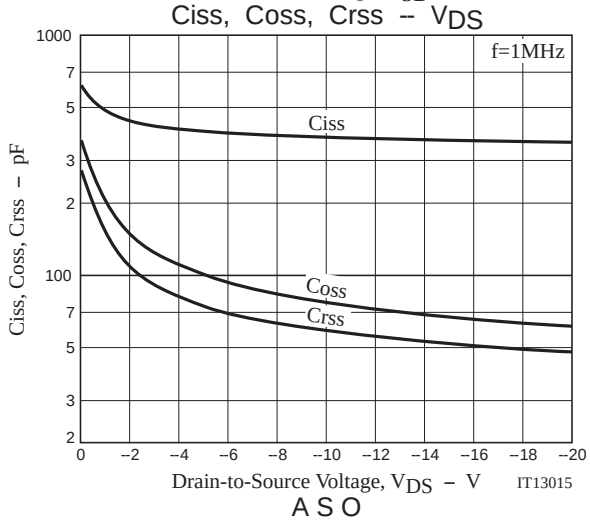

RDS(on) -- VGS
Ta=25°C
ID= –0.2A
–1.0A
–1.5A
Static Drain-to-Source On-State Resistance, RDS(on) – mΩ
Gate-to-Source Voltage, VGS – V
IT13010

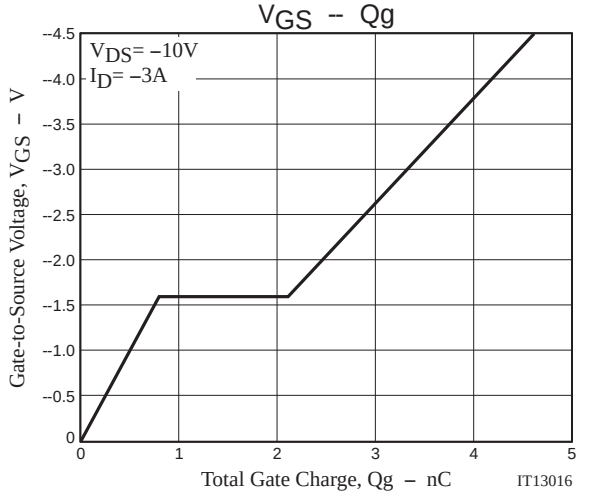

RDS(on) -- Ta
VGS= –1.8V, ID= –0.2A
VGS= –2.5V, ID= –1.0A
VGS= –4.5V, ID= –1.5A
Static Drain-to-Source On-State Resistance, RDS(on) – mΩ
Ambient Temperature, Ta – °C
IT13011

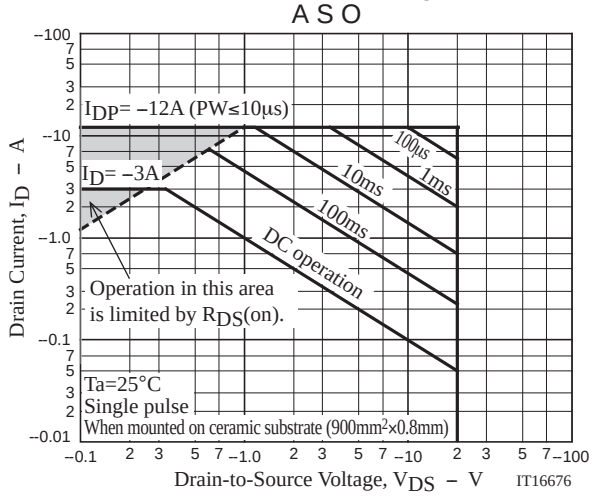

| yfs | -- ID
VDS= –10V
Ta= –25°C
75°C
25°C
Forward Transfer Admittance, | yfs | – S
Drain Current, ID – A
IT13012

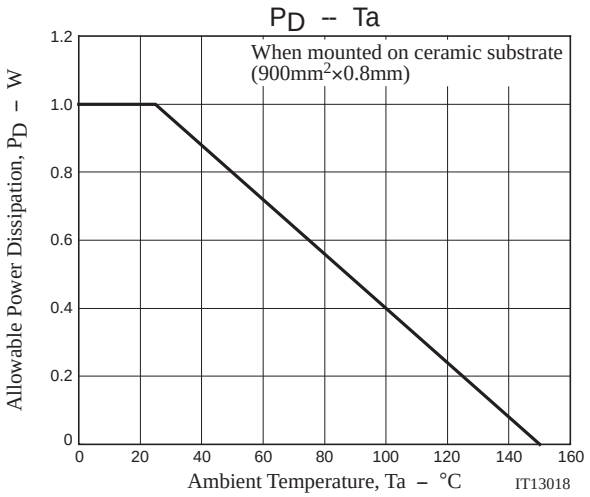

IS -- VSD
VGS=0V
Ta=75°C
25°C
–25°C
Source Current, IS – A
Diode Forward Voltage, VSD – V
IT13013


SW Time -- ID
VDD= –10V
VGS= –4V
td(off)
tf
tr
td(on)
Switching Time, SW Time – ns
Drain Current, ID – A
IT13014


Ciss, Coss, Crss -- VDS
f=1MHz
Ciss
Coss
Crss
Ciss, Coss, Crss – pF
Drain-to-Source Voltage, VDS – V
IT13015


VGS -- Qg
VDS= –10V
ID= –3A
Gate-to-Source Voltage, VGS – V
Total Gate Charge, Qg – nC
IT13016


A S O
IDP= –12A (PW≤10μs)
ID= –3A
100μs
1ms
10ms
100ms
DC operation
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
IT16676



Note on usage : Since the CPH3350 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

This catalog provides information as of December, 2011. Specifications and information herein are subject to change without notice.