Ordering number : ENA1532

SANYO Semiconductors
DATA SHEET

N-Channel Silicon MOSFET

CPH6445 — General-Purpose Switching Device Applications

Features

- Low ON-resistance.
- 4V drive.

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSS}		60	V
Gate-to-Source Voltage	V_{GSS}		±20	V
Drain Current (DC)	I_D		3.5	A
Drain Current (Pulse)	I_{DP}	PW≤10μs, duty cycle≤1%	14	A
Allowable Power Dissipation	P_D	When mounted on ceramic substrate (1200mm^2×0.8mm)	1.6	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	60			V
Zero-Gate Voltage Drain Current	I_{DSS}	V_{DS}=60V, 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=1.5A	1.2	2.0		S
Static Drain-to-Source On-State Resistance	R_{DS}(on)1	I_D=1.5A, V_{GS}=10V		92	117	mΩ
	R_{DS}(on)2	I_D=0.7A, V_{GS}=4.5V		120	168	mΩ
	R_{DS}(on)3	I_D=0.7A, V_{GS}=4V		132	185	mΩ

Marking : ZX

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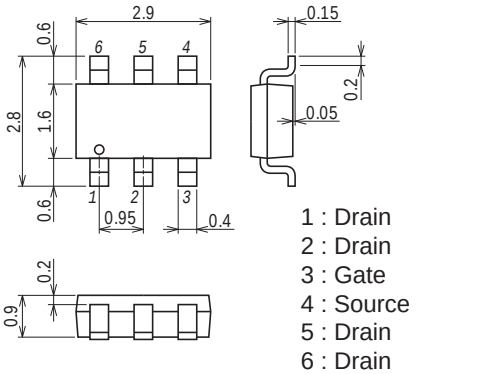
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	V_{DS}=20V, f=1MHz		310		pF
Output Capacitance	Coss	V_{DS}=20V, f=1MHz		40		pF
Reverse Transfer Capacitance	Crss	V_{DS}=20V, f=1MHz		25		pF
Turn-ON Delay Time	t_{d}(on)	See specified Test Circuit.		6.0		ns
Rise Time	t_{r}	See specified Test Circuit.		5.5		ns
Turn-OFF Delay Time	t_{d}(off)	See specified Test Circuit.		27		ns
Fall Time	t_{f}	See specified Test Circuit.		13		ns
Total Gate Charge	Qg	V_{DS}=30V, V_{GS}=10V, I_{D}=3.5A		6.8		nC
Gate-to-Source Charge	Qgs	V_{DS}=30V, V_{GS}=10V, I_{D}=3.5A		1.1		nC
Gate-to-Drain “Miller” Charge	Qgd	V_{DS}=30V, V_{GS}=10V, I_{D}=3.5A		1.4		nC
Diode Forward Voltage	V_{SD}	I_{S}=3.5A, V_{GS}=0V		0.85	1.2	V

Package Dimensions

unit : mm (typ)

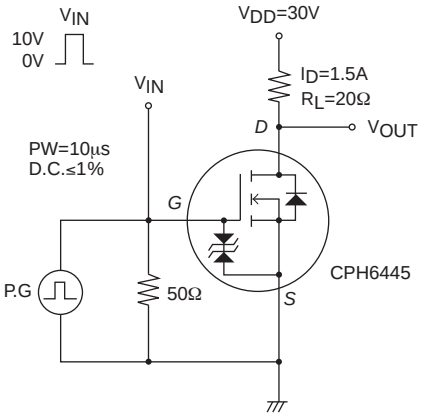
7018A-003

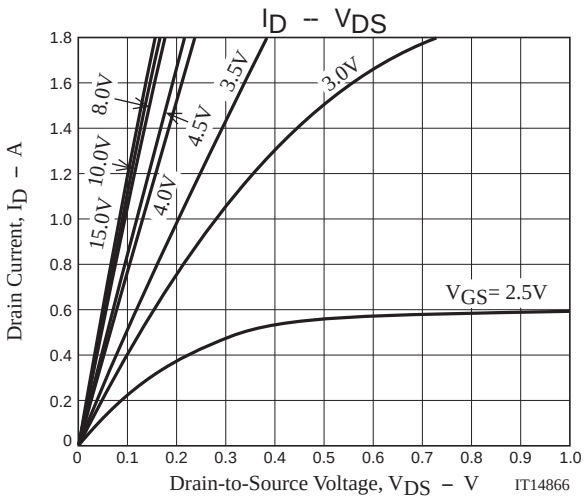


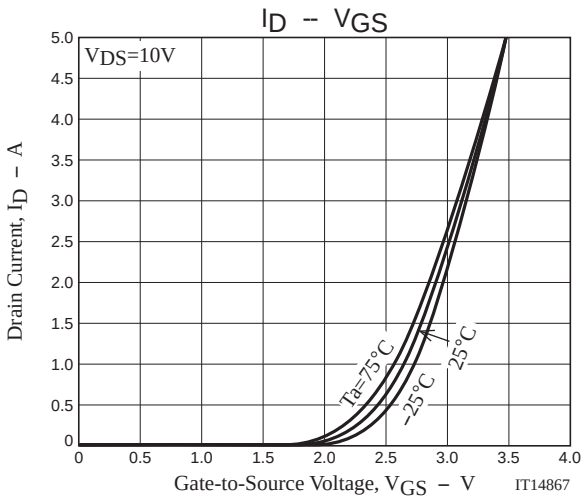
1 : Drain
2 : Drain
3 : Gate
4 : Source
5 : Drain
6 : Drain

SANYO : CPH6

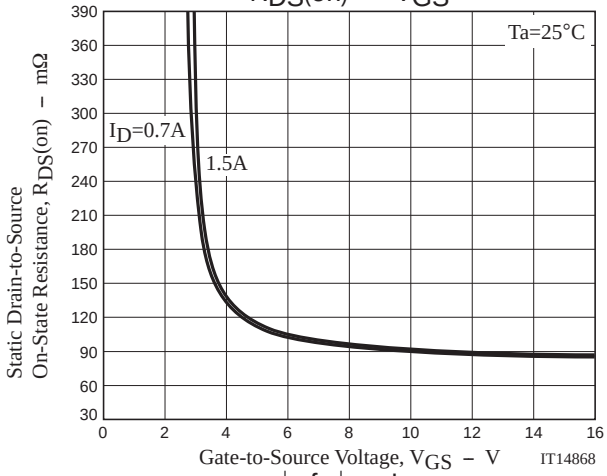
Switching Time Test Circuit



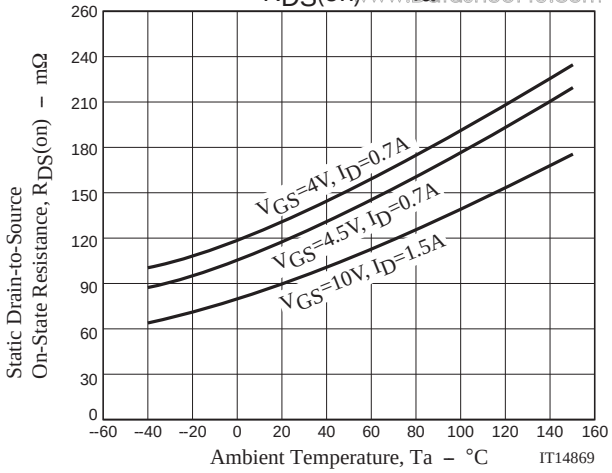




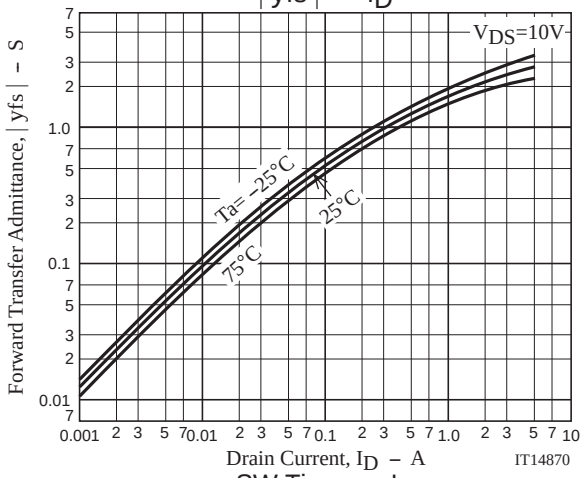
$R_{DS(on)}$ -- V_{GS}



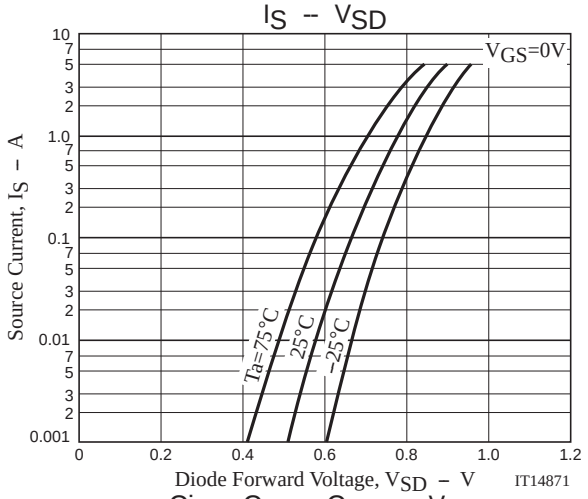
$R_{DS(on)}$ -- Ta



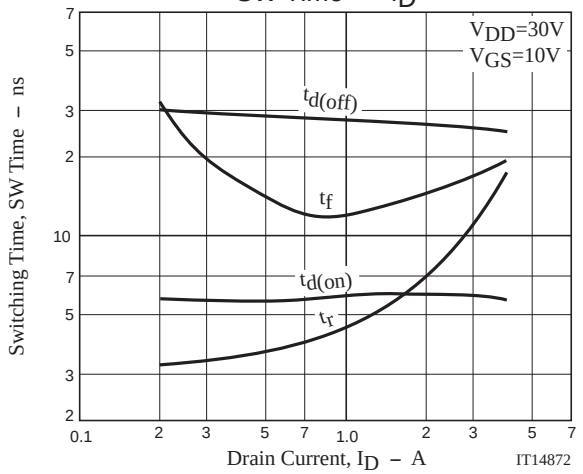
$|yfs|$ -- I_D



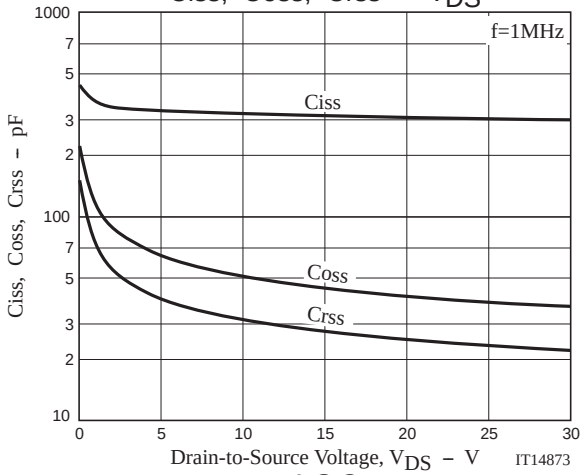
I_S -- V_{SD}



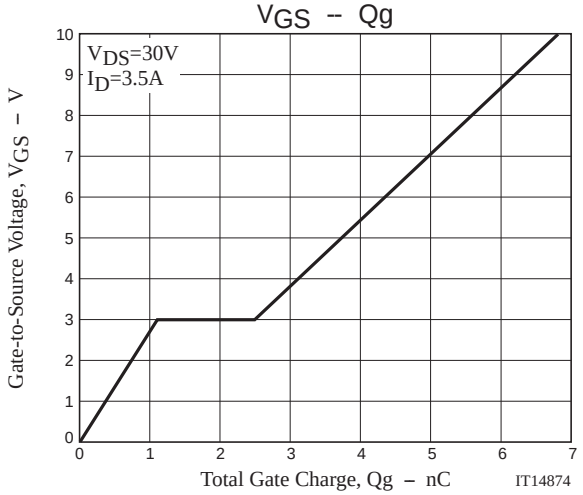
SW Time -- I_D



Ciss, Coss, Crss -- V_{DS}



V_{GS} -- Qg



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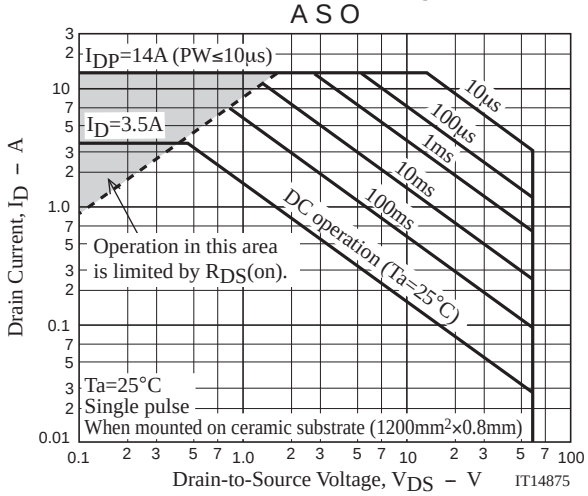

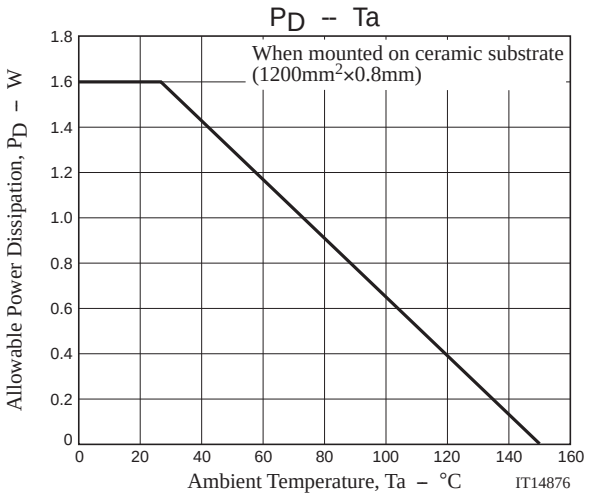

Note on usage : Since the CPH6445 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

This catalog provides information as of February, 2010. Specifications and information herein are subject to change without notice.