



# CPH6445 — N-Channel Silicon MOSFET

## 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 <sub>DSS</sub>		60	V
Gate-to-Source Voltage	V <sub>GSS</sub>		±20	V
Drain Current (DC)	I <sub>D</sub>		3.5	A
Drain Current (Pulse)	I <sub>DP</sub>	PW≤10μs, duty cycle≤1%	14	A
Allowable Power Dissipation	P <sub>D</sub>	When mounted on ceramic substrate (1200mm <sup>2</sup> ×0.8mm)	1.6	W
Channel Temperature	T <sub>ch</sub>		150	°C
Storage Temperature	T <sub>stg</sub>		-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 <sub>D</sub> =1mA, V <sub>GS</sub> =0V	60			V
Zero-Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =60V, V <sub>GS</sub> =0V			1	μA
Gate-to-Source Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> =±16V, V <sub>DS</sub> =0V			±10	μA
Cutoff Voltage	V <sub>GS(off)</sub>	V <sub>DS</sub> =10V, I <sub>D</sub> =1mA	1.2		2.6	V
Forward Transfer Admittance	y <sub>fs</sub>	V <sub>DS</sub> =10V, I <sub>D</sub> =1.5A	1.2	2.0		S
Static Drain-to-Source On-State Resistance	R <sub>DS(on)1</sub>	I <sub>D</sub> =1.5A, V <sub>GS</sub> =10V		92	117	mΩ
	R <sub>DS(on)2</sub>	I <sub>D</sub> =0.7A, V <sub>GS</sub> =4.5V		120	168	mΩ
	R <sub>DS(on)3</sub>	I <sub>D</sub> =0.7A, V <sub>GS</sub> =4V		132	185	mΩ

Marking : ZX

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# CPH6445

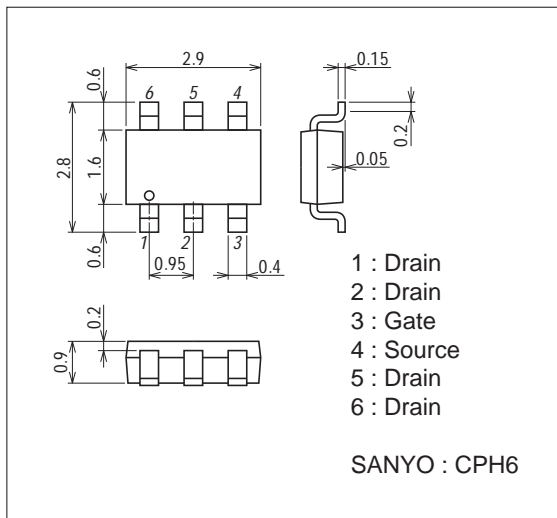
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	$V_{DS}=20V, f=1MHz$		310		pF
Output Capacitance	Coss	$V_{DS}=20V, f=1MHz$		40		pF
Reverse Transfer Capacitance	Crss	$V_{DS}=20V, f=1MHz$		25		pF
Turn-ON Delay Time	$t_{d(on)}$	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	VSD	$I_S=3.5A, V_{GS}=0V$		0.85	1.2	V

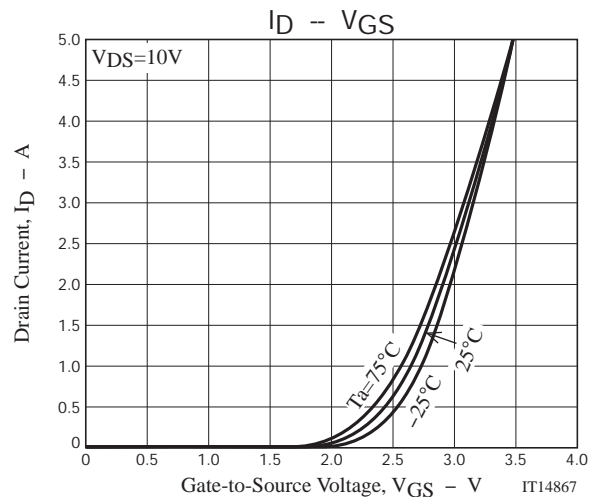
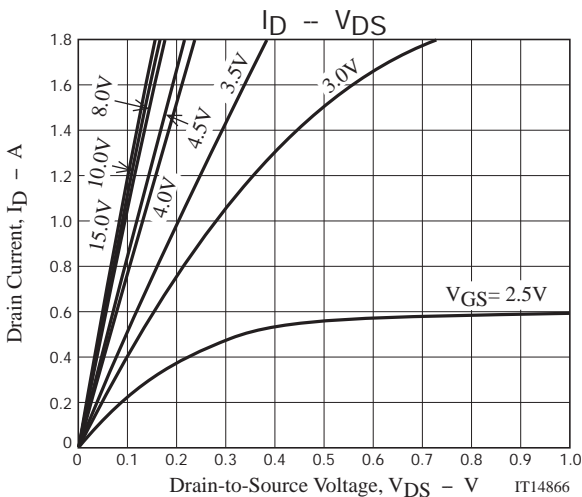
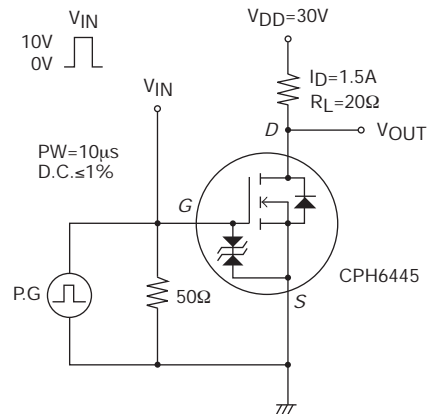
## Package Dimensions

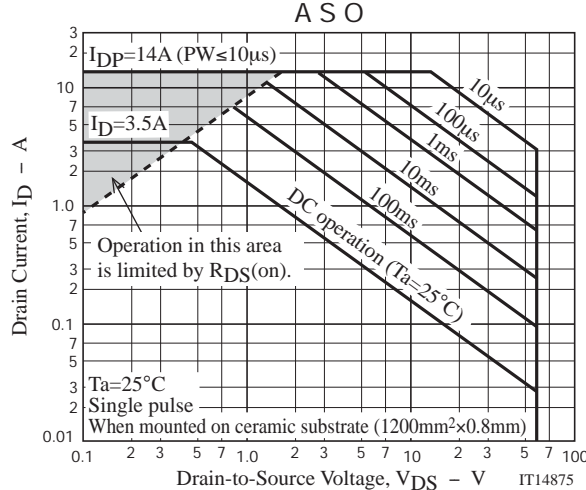
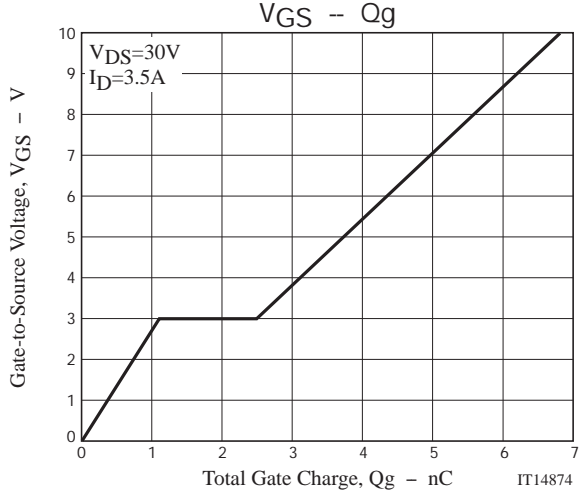
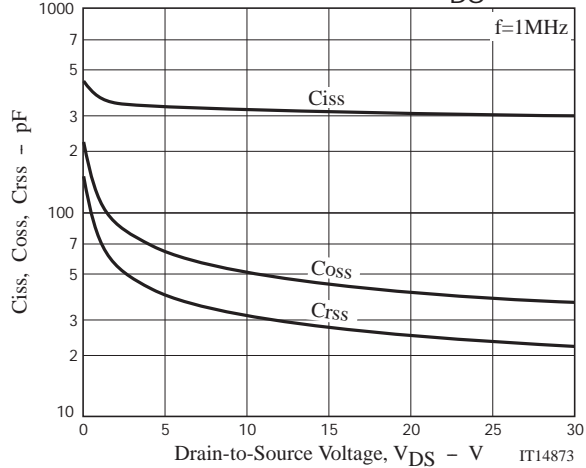
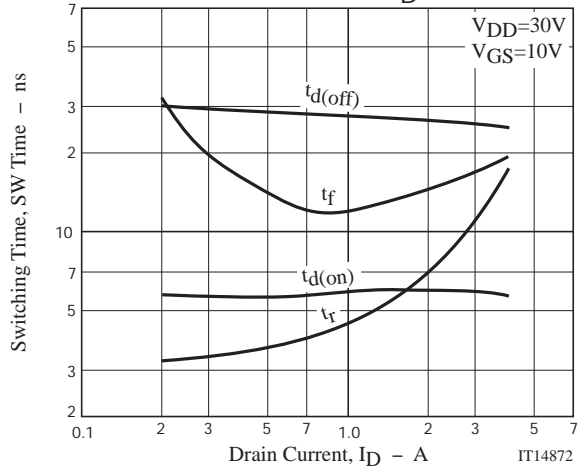
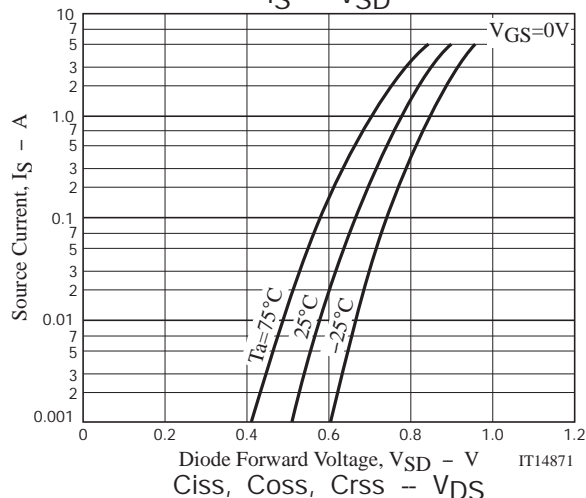
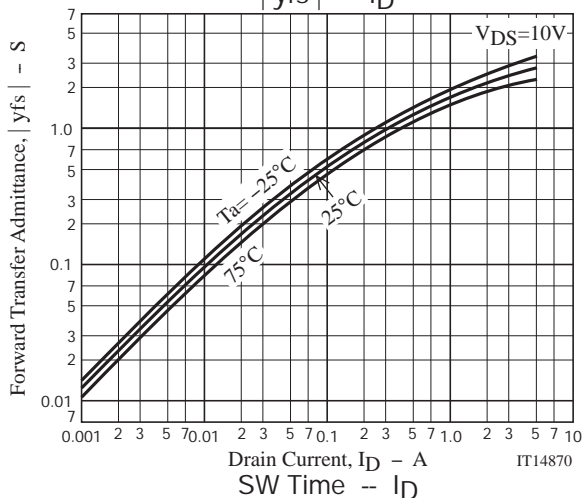
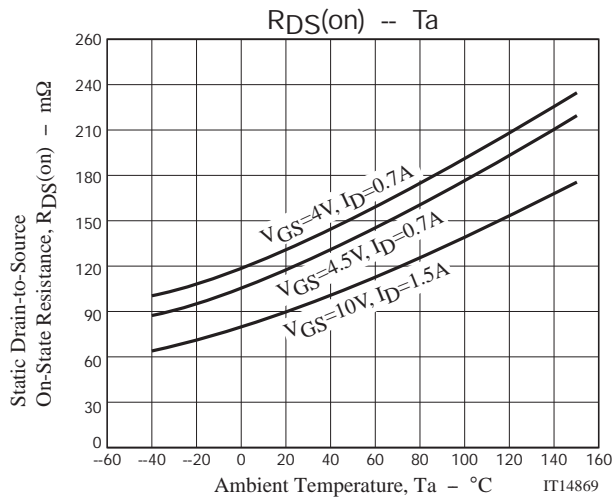
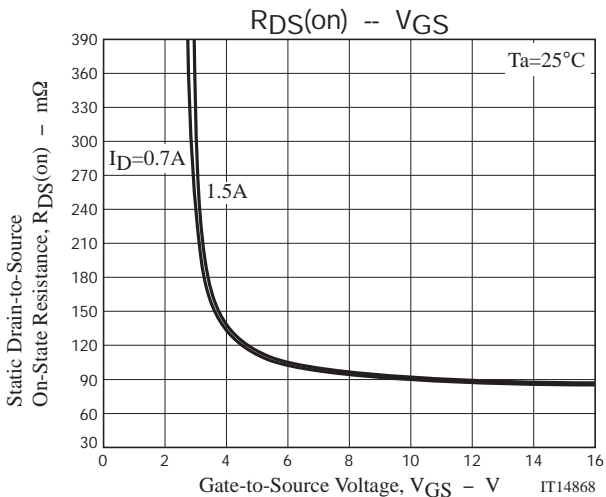
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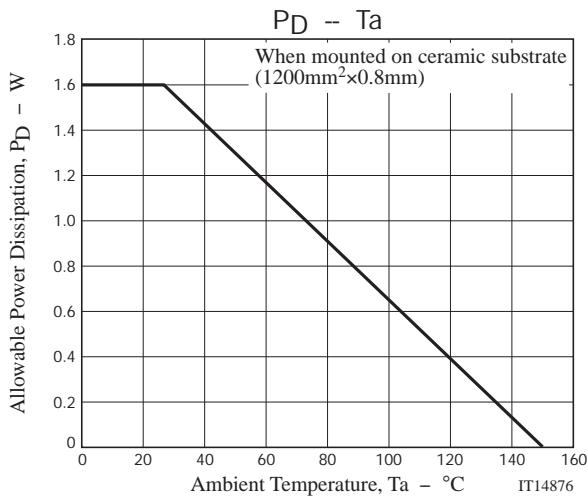
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## Switching Time Test Circuit







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

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