



CPH6444

N-Channel Power MOSFET 60V, 4.5A, 78mΩ, Single CPH6

ON Semiconductor®

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Features

- Low ON-resistance
- Protection diode in
- 4V drive
- Halogen free compliance

Specifications

Absolute Maximum Ratings at Ta=25°C

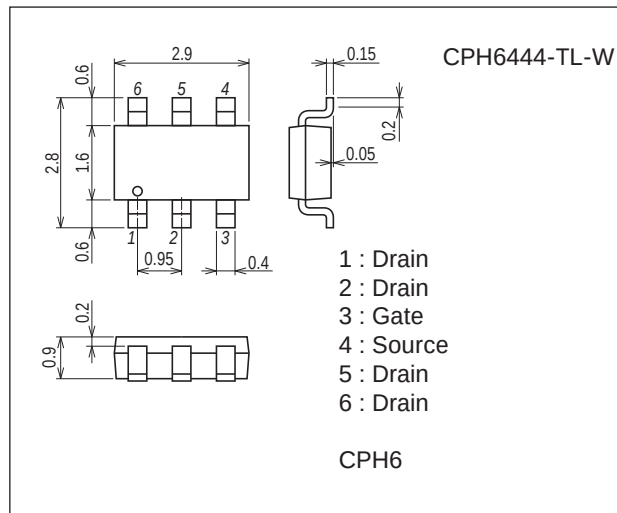
Parameter	Symbol	Conditions	Ratings	Unit
Drain to Source Voltage	V _{DSS}		60	V
Gate to Source Voltage	V _{GSS}		±20	V
Drain Current (DC)	I _D		4.5	A
Drain Current (Pulse)	I _{DP}	PW≤10μs, duty cycle≤1%	18	A
Allowable Power Dissipation	P _D	When mounted on ceramic substrate (900mm ² ×0.8mm)	1.6	W
Channel Temperature	T _{ch}		150	°C
Storage Temperature	T _{stg}		-55 to +150	°C

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)

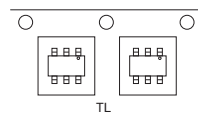
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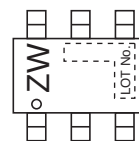
Ordering & Package Information

Device	Package	Shipping	memo
CPH6444-TL-W	CPH6 SC-74, SOT-26, SOT-457	3,000 pcs./reel	Pb-Free and Halogen Free

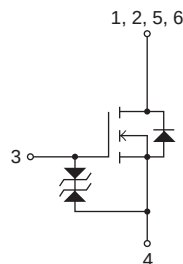
Packing Type: TL



Marking

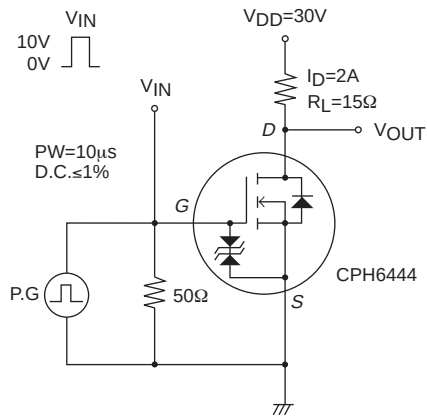


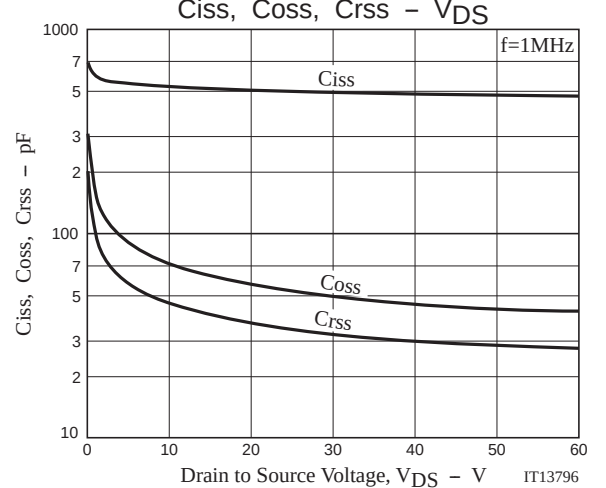
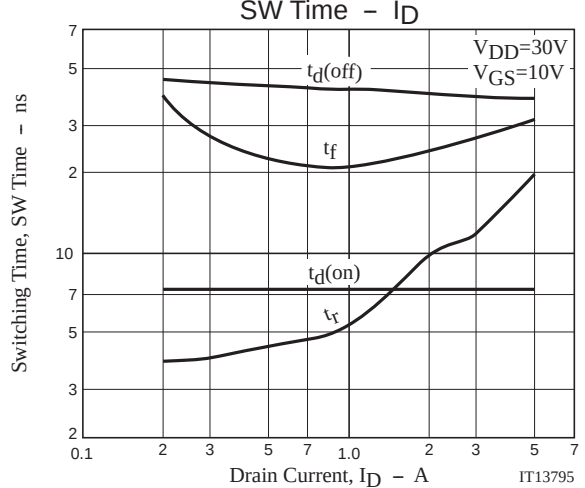
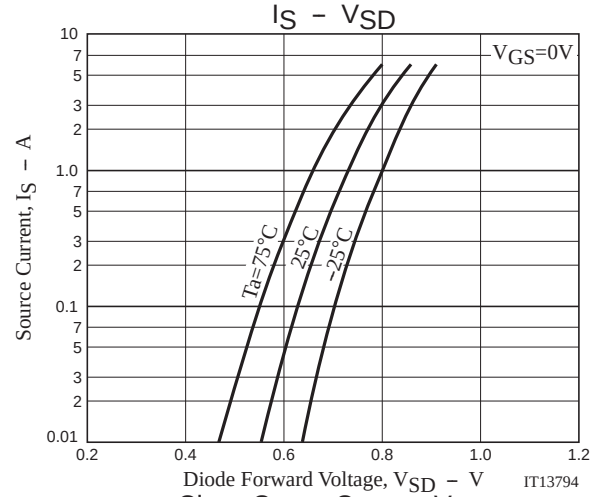
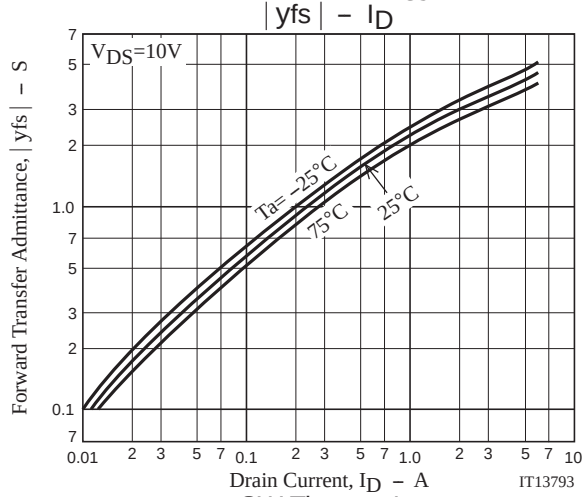
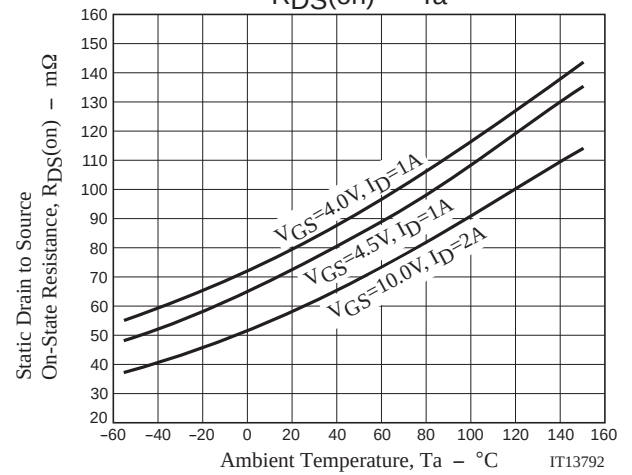
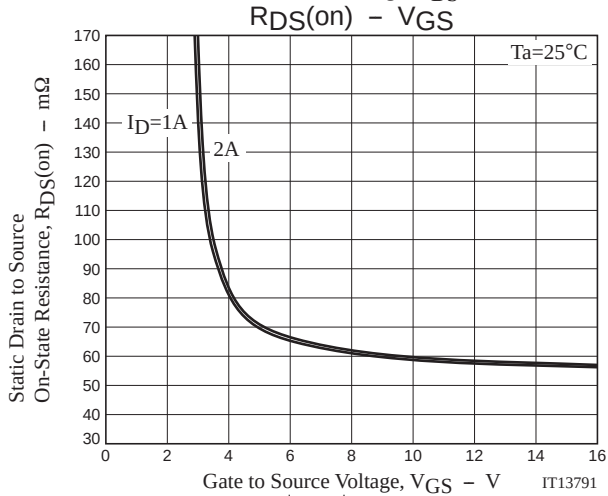
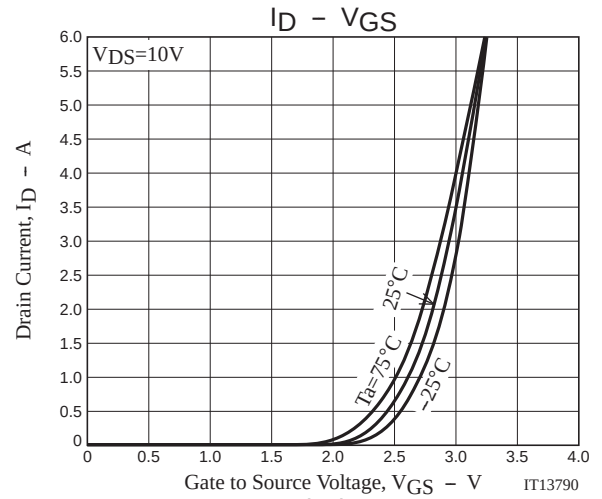
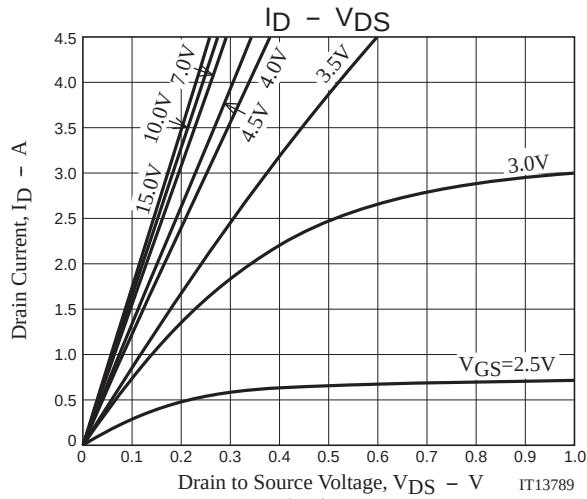
Electrical Connection

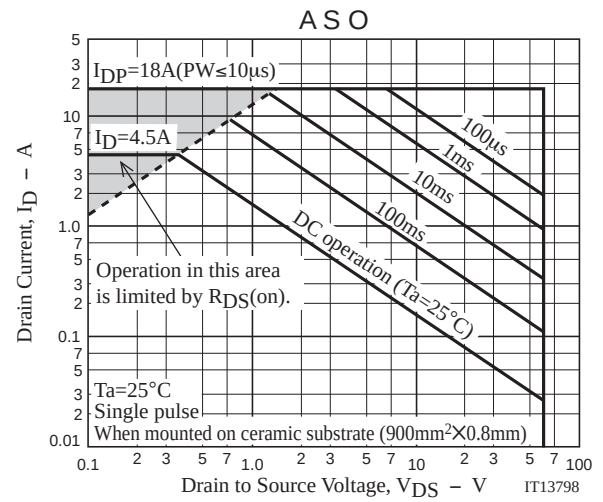
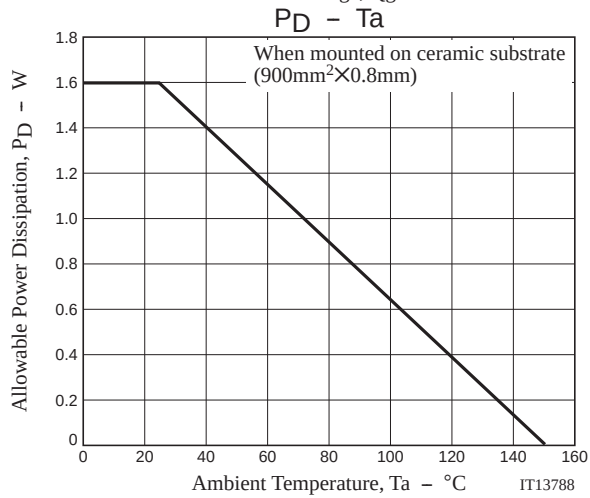
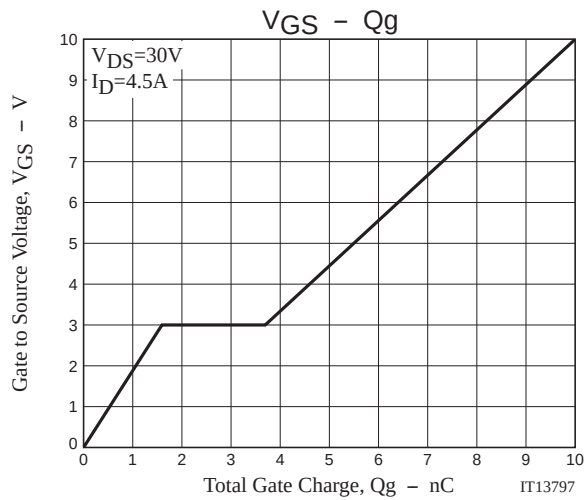


Electrical Characteristics at $T_a=25^{\circ}\text{C}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain to Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=1\text{mA}$, $V_{GS}=0\text{V}$	60			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS}=60\text{V}$, $V_{GS}=0\text{V}$			1	μA
Gate to Source Leakage Current	I_{GSS}	$V_{GS}=\pm 16\text{V}$, $V_{DS}=0\text{V}$			± 10	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=10\text{V}$, $I_D=1\text{mA}$	1.2		2.6	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=10\text{V}$, $I_D=2\text{A}$	1.8	3		S
Static Drain to Source On-State Resistance	$R_{DS(on)1}$	$I_D=2\text{A}$, $V_{GS}=10\text{V}$		60	78	$\text{m}\Omega$
	$R_{DS(on)2}$	$I_D=1\text{A}$, $V_{GS}=4.5\text{V}$		74	104	$\text{m}\Omega$
	$R_{DS(on)3}$	$I_D=1\text{A}$, $V_{GS}=4\text{V}$		81	114	$\text{m}\Omega$
Input Capacitance	C_{iss}	$V_{DS}=20\text{V}$, $f=1\text{MHz}$		505		pF
Output Capacitance	C_{oss}			57		pF
Reverse Transfer Capacitance	C_{rss}			37		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit.		7.3		ns
Rise Time	t_r			9.8		ns
Turn-OFF Delay Time	$t_{d(off)}$			40		ns
Fall Time	t_f			24		ns
Total Gate Charge	Q_g	$V_{DS}=30\text{V}$, $V_{GS}=10\text{V}$, $I_D=4.5\text{A}$		10		nC
Gate to Source Charge	Q_{gs}			1.6		nC
Gate to Drain "Miller" Charge	Q_{gd}			2.1		nC
Diode Forward Voltage	V_{SD}	$I_S=4.5\text{A}$, $V_{GS}=0\text{V}$		0.83	1.2	V

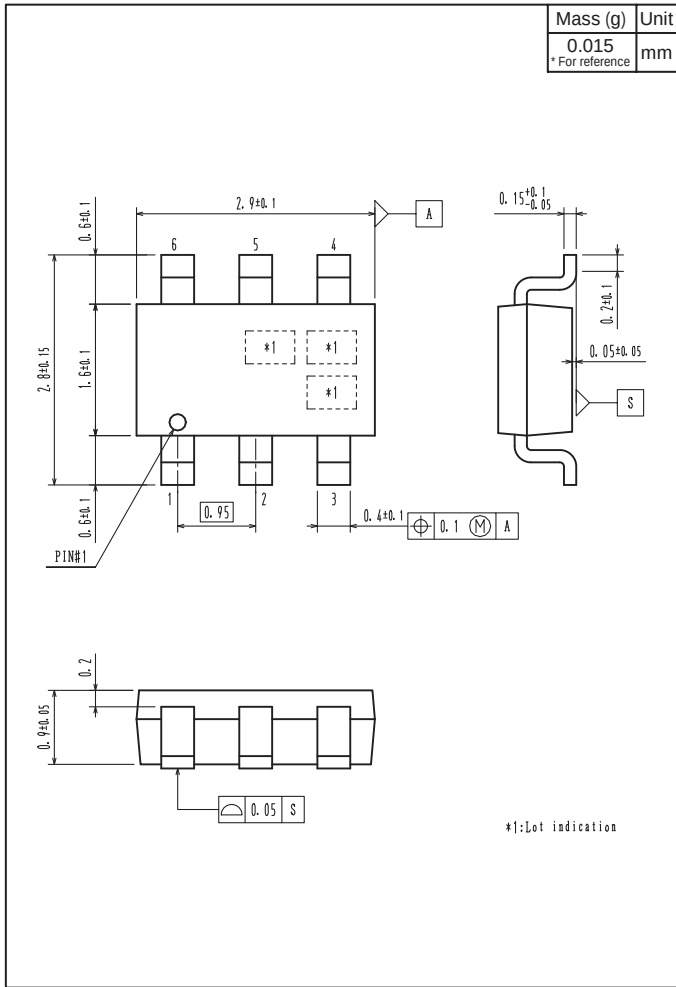
Switching Time Test Circuit



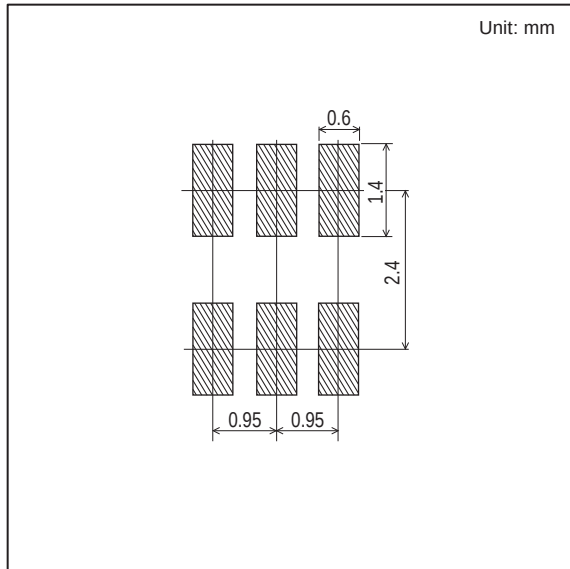


Outline Drawing

CPH6444-TL-W



Land Pattern Example



Note on usage : Since the CPH6444 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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Офис по работе с юридическими лицами:

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: info@moschip.ru

Skype отдела продаж:

moschip.ru

moschip.ru_4

moschip.ru_6

moschip.ru_9