



CPH6442

N-Channel Power MOSFET 60V, 6A, 43mΩ, Single CPH6

ON Semiconductor®

<http://onsemi.com>

Features

- Low ON-resistance
- 4V drive
- Protection diode in

Specifications

Absolute Maximum Ratings at Ta=25°C

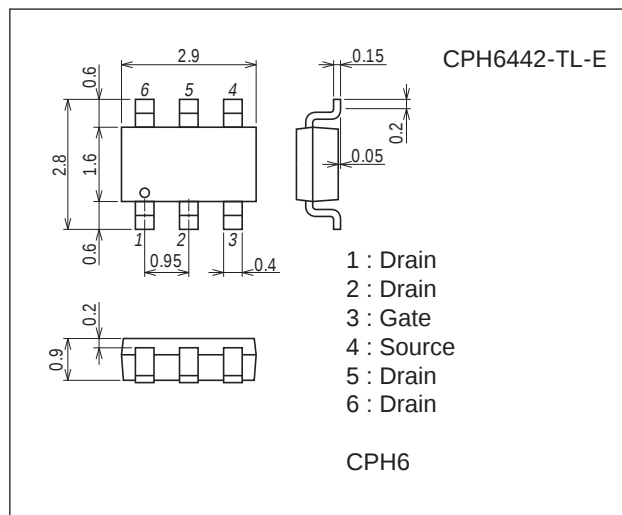
Parameter	Symbol	Conditions	Ratings	Unit
Drain to Source Voltage	V _{DSS}		60	V
Gate to Source Voltage	V _{GSS}		±20	V
Drain Current (DC)	I _D		6	A
Drain Current (Pulse)	I _{DP}	PW≤10μs, duty cycle≤1%	24	A
Allowable Power Dissipation	P _D	When mounted on ceramic substrate (900mm ² ×0.8mm)	1.6	W
Channel 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)

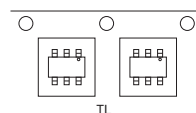
7018A-003



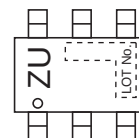
Ordering & Package Information

Device	Package	Shipping	memo
CPH6442-TL-E	CPH6 SC-74, SOT-26, SOT-457	3,000 pcs./reel	Pb-Free

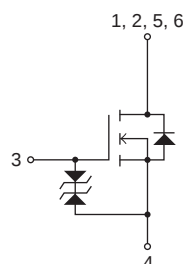
Packing Type: TL



Marking



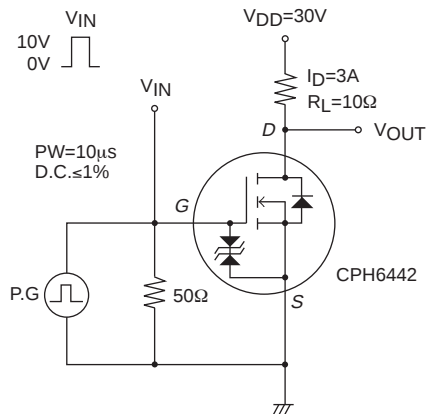
Electrical Connection

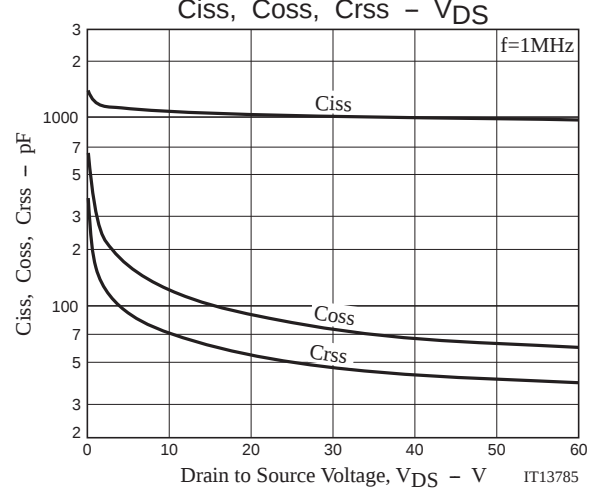
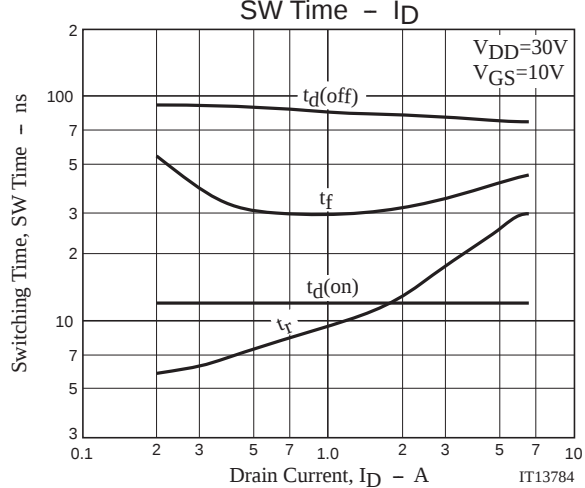
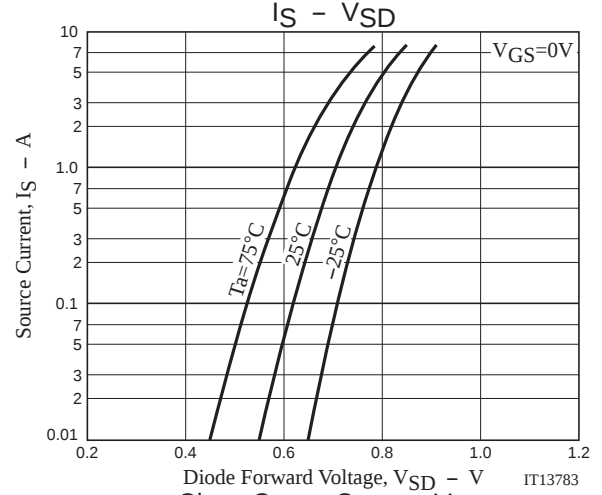
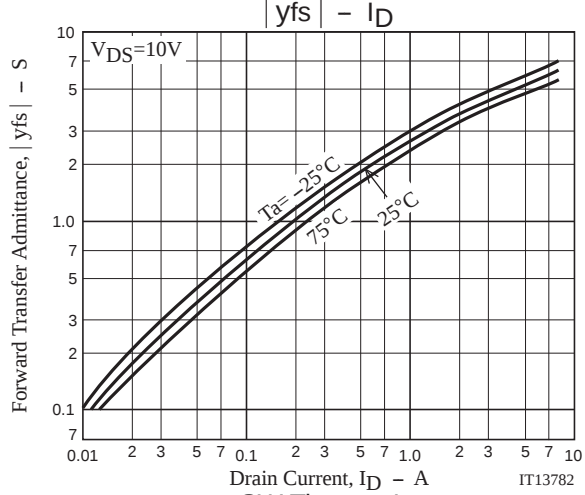
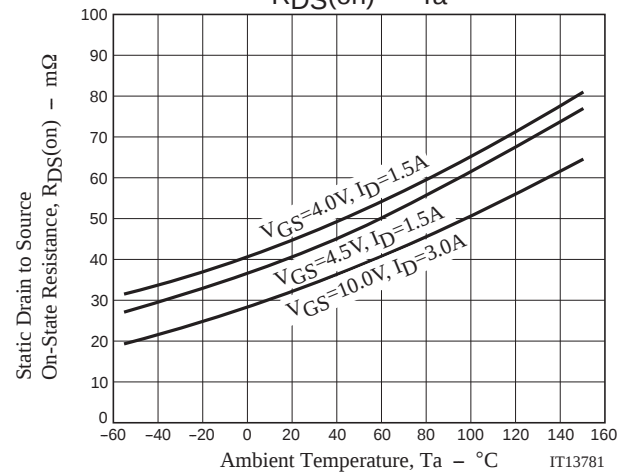
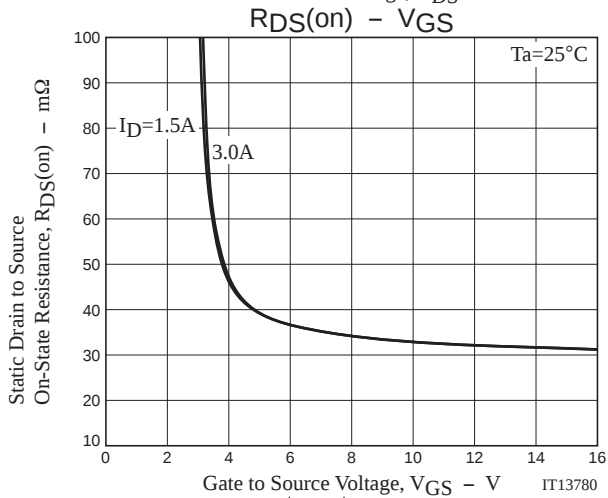
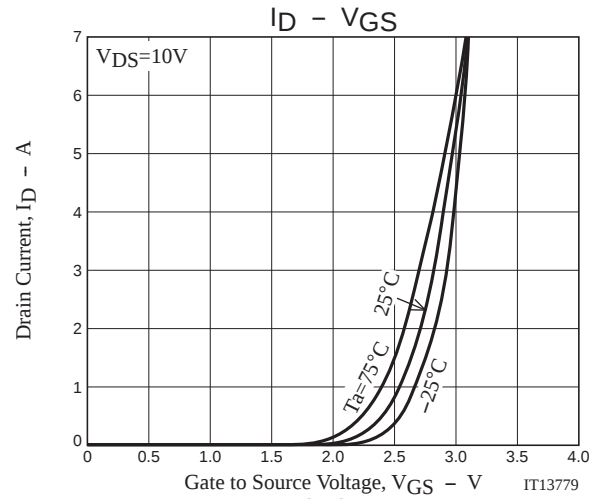
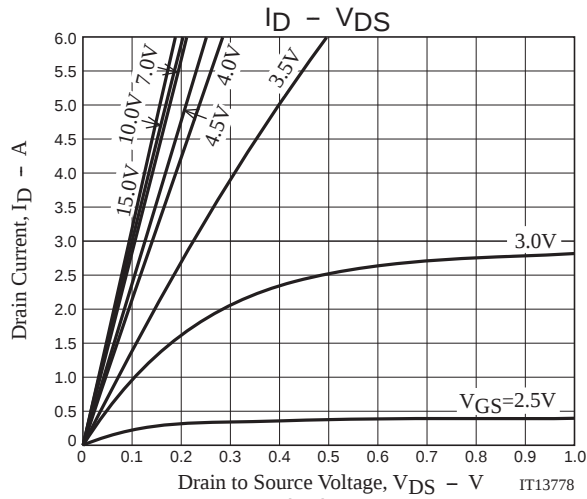


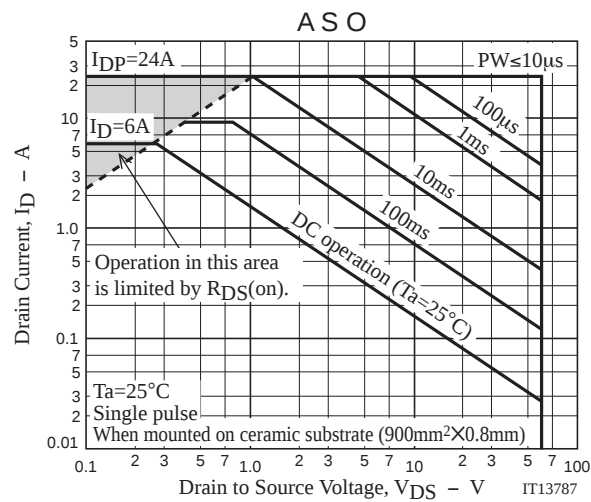
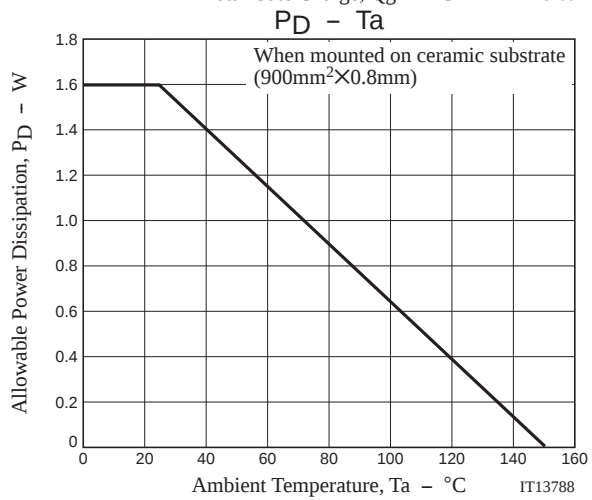
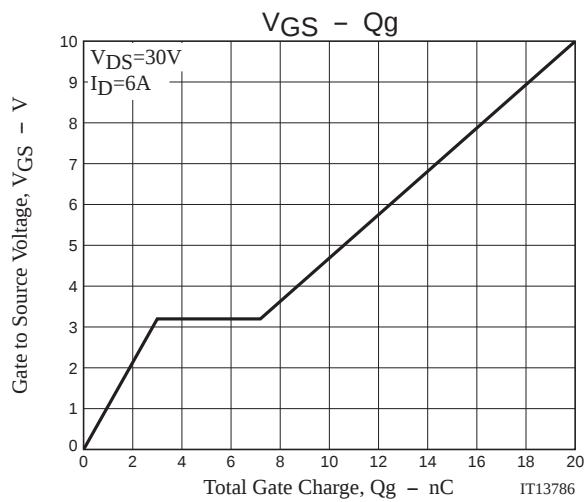
Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain to Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=1mA, V_{GS}=0V$	60			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS}=60V, V_{GS}=0V$			1	μA
Gate to Source Leakage Current	I_{GSS}	$V_{GS}=\pm 16V, V_{DS}=0V$			± 10	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=10V, I_D=1mA$	1.2		2.6	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=10V, I_D=3A$	2.6	4.4		S
Static Drain to Source On-State Resistance	$R_{DS(on)1}$	$I_D=3A, V_{GS}=10V$		33	43	m Ω
	$R_{DS(on)2}$	$I_D=1.5A, V_{GS}=4.5V$		42	59	m Ω
	$R_{DS(on)3}$	$I_D=1.5A, V_{GS}=4V$		46	65	m Ω
Input Capacitance	C_{iss}	$V_{DS}=20V, f=1MHz$		1040		pF
Output Capacitance	C_{oss}			90		pF
Reverse Transfer Capacitance	C_{rss}			55		pF
Turn-ON Delay Time	$t_d(on)$	See specified Test Circuit.		12		ns
Rise Time	t_r			18		ns
Turn-OFF Delay Time	$t_d(off)$			80		ns
Fall Time	t_f			35		ns
Total Gate Charge	Q_g	$V_{DS}=30V, V_{GS}=10V, I_D=6A$		20		nC
Gate to Source Charge	Q_{gs}			3.0		nC
Gate to Drain "Miller" Charge	Q_{gd}			4.2		nC
Diode Forward Voltage	V_{SD}	$I_S=6A, V_{GS}=0V$		0.82	1.2	V

Switching Time Test Circuit







Embossed Taping Specification

CPH6442-TL-E

1. Packing Format

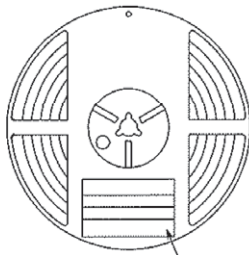
Package Name	Carrier Tape Type	Maximum Number of devices contained (pcs)			Packing format	
		Reel	Inner box	Outer box	Inner BOX (C-1)	Outer BOX (A-7)
CPH6	CPH6	3,000	15,000	90,000	5 reels contained Dimensions:mm (external) 183×72×185	6 inner boxes contained Dimensions:mm (external) 440×195×210

Reel label, Inner box label
(unit:mm)

Outer box label

It is a label at the time of factory shipments.
The form of a label may change in physical
distribution process.

Packing method



Reel label

Type No.
LOT No.
Quantity
Origin

TYPE	000000000
LOT	00
QTY	0,000 (1) LEAD FREE *
SPECIAL	*20722005310C*
ASSEMBLY	**** (DIFFUSION:****)

NOTE (1)

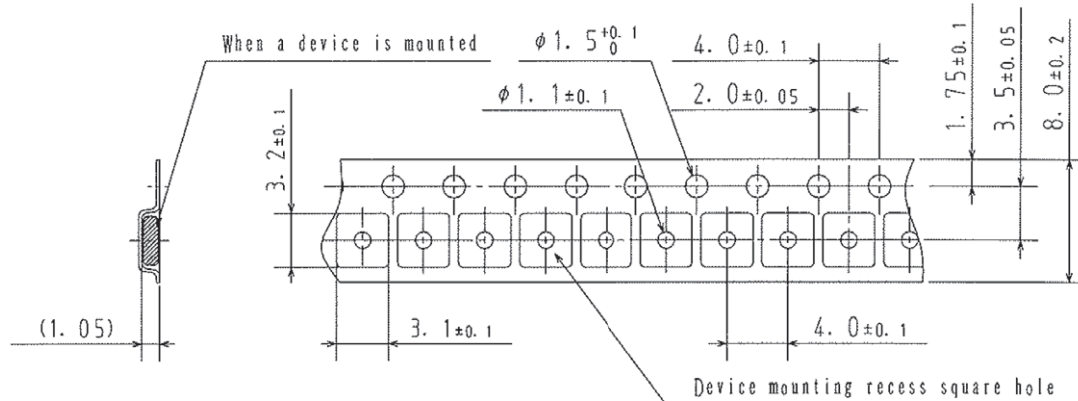
The LEAD FREE * description shows that the surface
treatment of the terminal is lead free.

Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

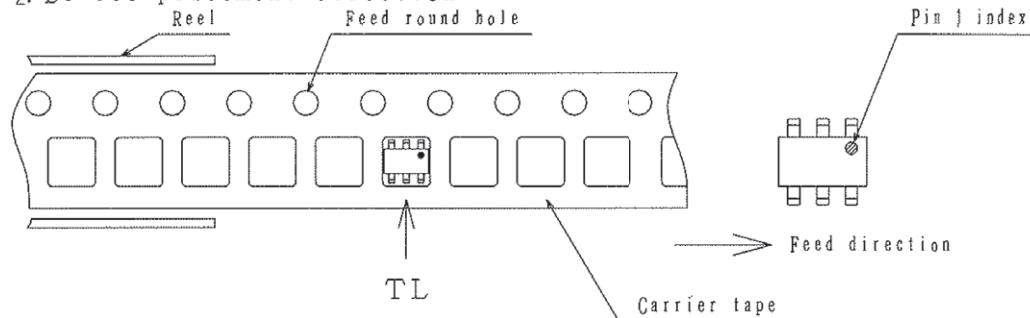
TYPE CODE	*****
TYPE	*****
QTY	0,000 PCS (1) LEAD FREE *
LOT	*****
PACKAGE	*****
SPECIAL	*20722005310C*
ASSEMBLY	**** (DIFFUSION:****)

2. Taping configuration

2-1. Carrier tape size (unit:mm)

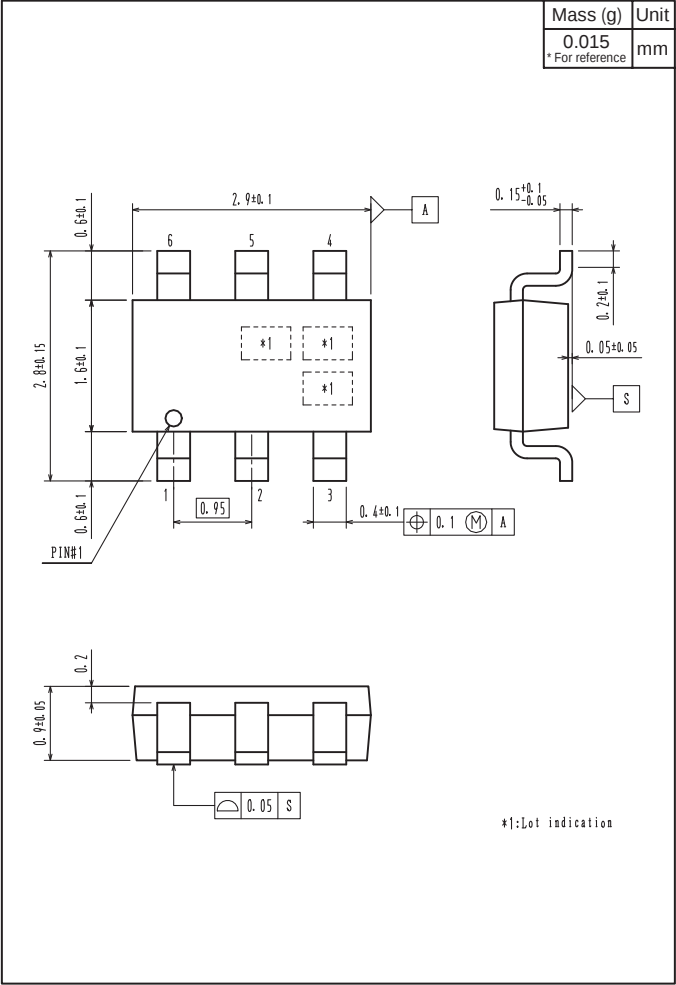


2-2. Device placement direction

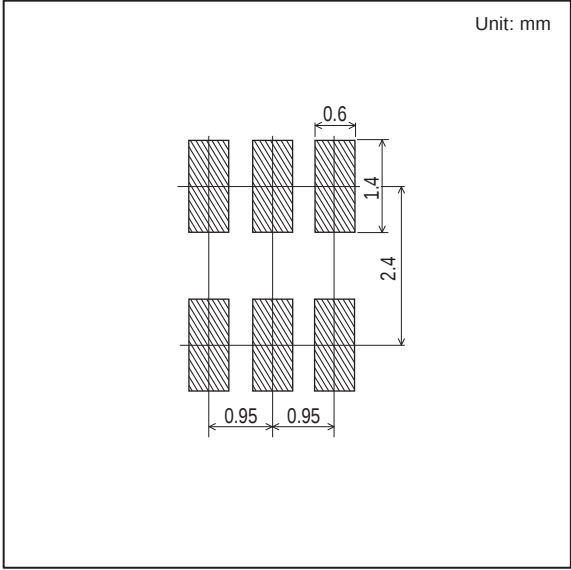


Those with pin 1 index on the feed hole side.....TL

Outline Drawing
CPH6442-TL-E



Land Pattern Example



Note on usage : Since the CPH6442 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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