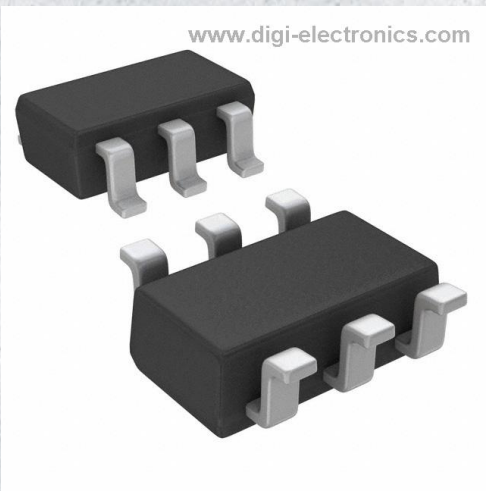
CPH6354-TL-H Datasheet



https://www.DiGi-Electronics.com

DiGi Electronics Part Number	CPH6354-TL-H-DG
Manufacturer	onsemi
Manufacturer Product Number	CPH6354-TL-H
Description	MOSFET P-CH 60V 4A 6CPH
Detailed Description	P-Channel 60 V 4A (Ta) 1.6W (Ta) Surface Mount 6-CPH

Tel: +00 852-30501935

RFQ Email: Info@DiGi-Electronics.com

Purchase and inquiry

Manufacturer Product Number:	Manufacturer:
CPH6354-TL-H	onsemi
Series:	Product Status:
-	Discontinued at Digi-Key
FET Type:	Technology:
P-Channel	MOSFET (Metal Oxide)
Drain to Source Voltage (Vdss):	Current - Continuous Drain (Id) @ 25°C:
60 V	4A (Ta)
Drive Voltage (Max Rds On, Min Rds On):	Rds On (Max) @ Id, Vgs:
4V, 10V	100mOhm @ 2A, 10V
Vgs(th) (Max) @ Id:	Gate Charge (Qg) (Max) @ Vgs:
-	14 nC @ 10 V
Vgs (Max):	Input Capacitance (Ciss) (Max) @ Vds:
±20V	600 pF @ 20 V
FET Feature:	Power Dissipation (Max):
-	1.6W (Ta)
Operating Temperature:	Mounting Type:
150°C (TJ)	Surface Mount
Supplier Device Package:	Package / Case:
6-CPH	SOT-23-6
Base Product Number:	
CPH635	

Environmental & Export classification

RoHS Status:	Moisture Sensitivity Level (MSL):
ROHS3 Compliant	1 (Unlimited)
REACH Status:	ECCN:
REACH Unaffected	EAR99
HTSUS:	
8541.29.0095	

CPH6354

Power MOSFET
−60V, 100mΩ, −4A, Single P-Channel

ON Semiconductor®
www.onsemi.com

Features

- ON-resistance $R_{DS}(on)1$=77mΩ(typ.)
- 4V Drive
- ESD Diode - Protected Gate
- Pb-Free, Halogen Free and RoHS Compliance

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Value	Unit
Drain-to-Source Voltage	V_{DSS}		−60	V
Gate-to-Source Voltage	V_{GSS}		±20	V
Drain Current (DC)	I_D		−4	A
Drain Current (Pulse)	I_{DP}	PW≤10μs, duty cycle≤1%	−16	A
Power Dissipation	P_D	When mounted on ceramic substrate (1500mm²×0.8mm)	1.6	W
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		−55 to +150	°C

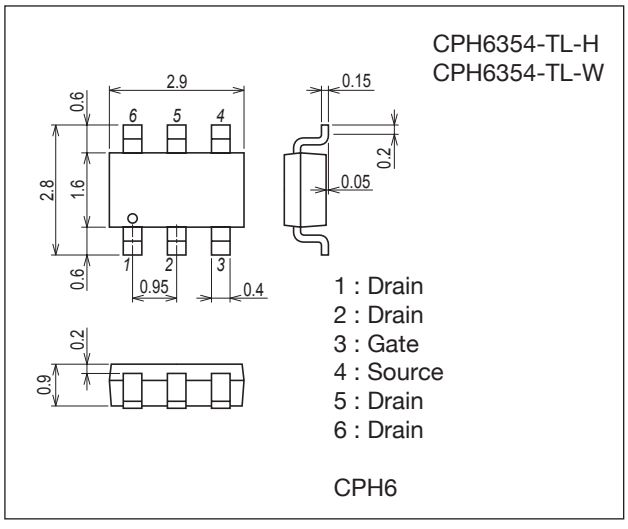
Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

Thermal Resistance Ratings

Parameter	Symbol	Value	Unit
Junction to Ambient When mounted on ceramic substrate (1500mm²×0.8mm)	$R_{\theta JA}$	78.1	°C/W

Package Dimensions

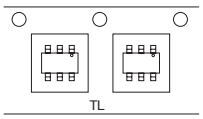
unit : mm (typ)
7018A-003



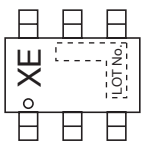
Product & Package Information

- Package : CPH6
- JEITA, JEDEC : SC-74, SOT-26, SOT-457
- Minimum Packing Quantity : 3,000 pcs./reel

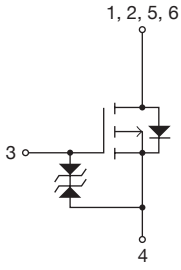
Packing Type: TL



Marking



Electrical Connection



ORDERING INFORMATION

See detailed ordering and shipping information on page 2 of this data sheet.

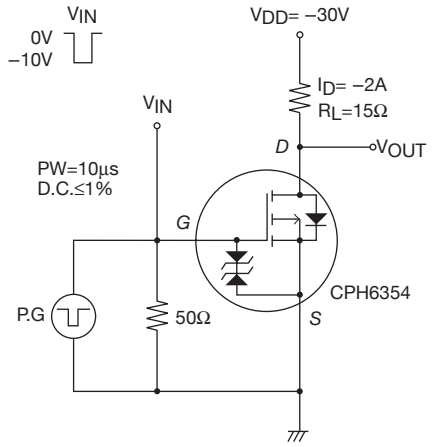
CPH6354

Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Value			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
Gate Threshold Voltage	V_{GS}(th)	V_{DS}=−10V, I_D=−1mA	−1.2		−2.6	V
Forward Transconductance	g_{FS}	V_{DS}=−10V, I_D=−2A		4.8		S
Static Drain-to-Source On-State Resistance	R_{DS}(on)1	I_D=−2A, V_{GS}=−10V		77	100	mΩ
	R_{DS}(on)2	I_D=−1A, V_{GS}=−4.5V		96	135	mΩ
	R_{DS}(on)3	I_D=−1A, V_{GS}=−4V		103	145	mΩ
Input Capacitance	Ciss	V_{DS}=−20V, f=1MHz		600		pF
Output Capacitance	Coss			60		pF
Reverse Transfer Capacitance	Crss			50		pF
Turn-ON Delay Time	t_d(on)	See specified Test Circuit.		5.8		ns
Rise Time	t_r			12		ns
Turn-OFF Delay Time	t_d(off)			78		ns
Fall Time	t_f			40		ns
Total Gate Charge	Qg	V_{DS}=−30V, V_{GS}=−10V, I_D=−4A		14		nC
Gate-to-Source Charge	Qgs			1.6		nC
Gate-to-Drain “Miller” Charge	Qgd			3.4		nC
Forward Diode Voltage	V_{SD}	I_S=−4A, V_{GS}=0V		−0.84	−1.2	V

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

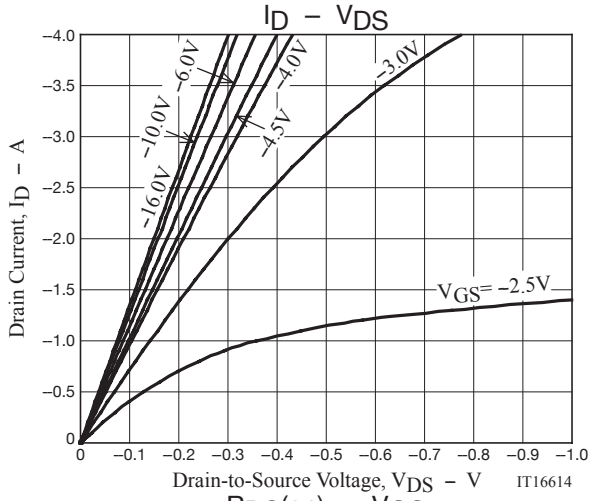
Switching Time Test Circuit

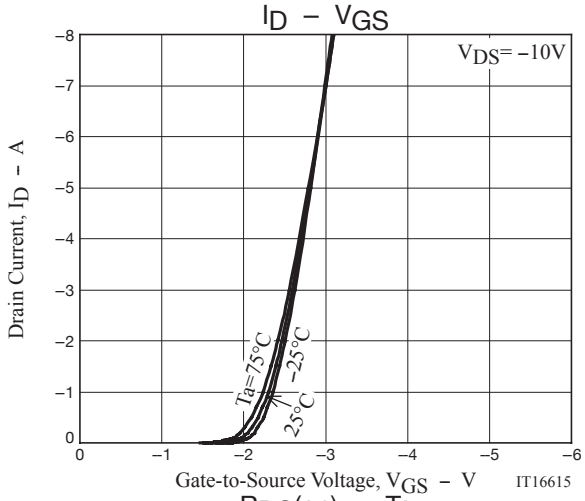


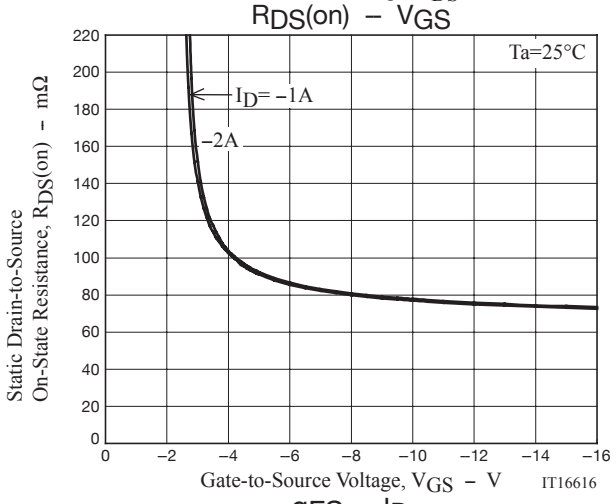
ORDERING INFORMATION

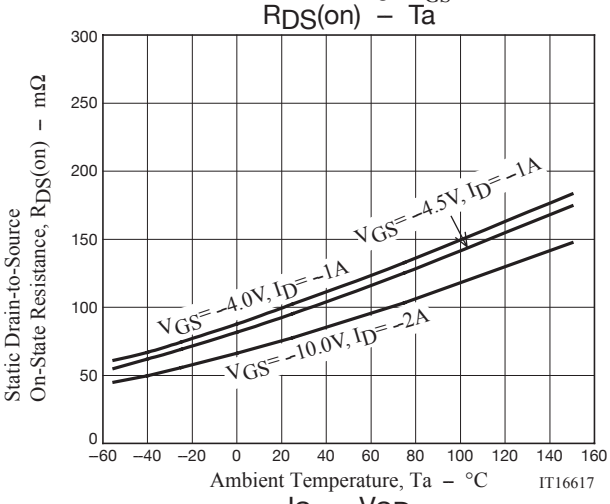
Device	Package	Shipping	memo
CPH6354-TL-H	CPH6	3,000pcs./reel	Pb-Free and Halogen Free
CPH6354-TL-W			

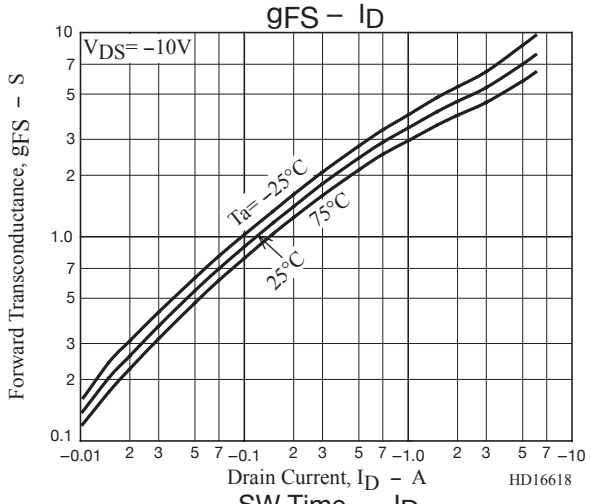
CPH6354

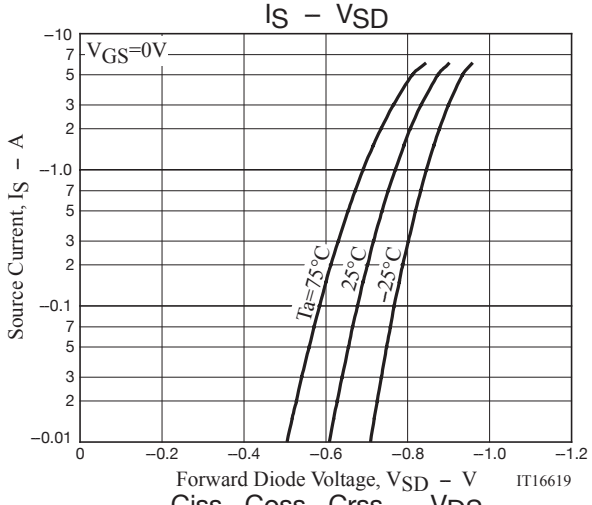

ID – VDS
Drain Current, ID – A
Drain-to-Source Voltage, VDS – V
IT16614
–6.0V
–10.0V
–16.0V
–4.0V
–4.5V
–3.0V
VGS= –2.5V

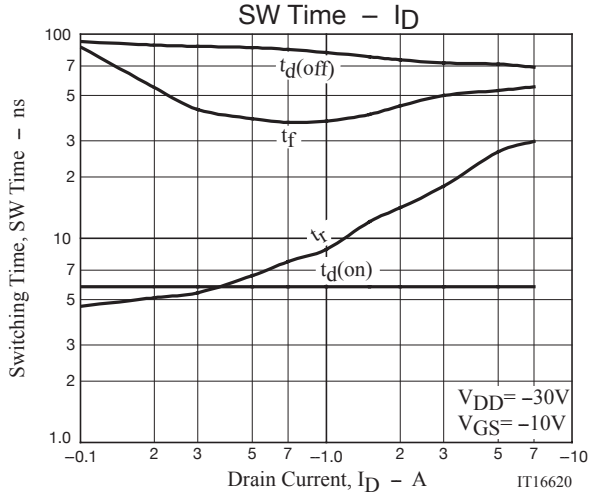

ID – VGS
Drain Current, ID – A
Gate-to-Source Voltage, VGS – V
IT16615
VDS= –10V
Ta=75°C
25°C
–25°C

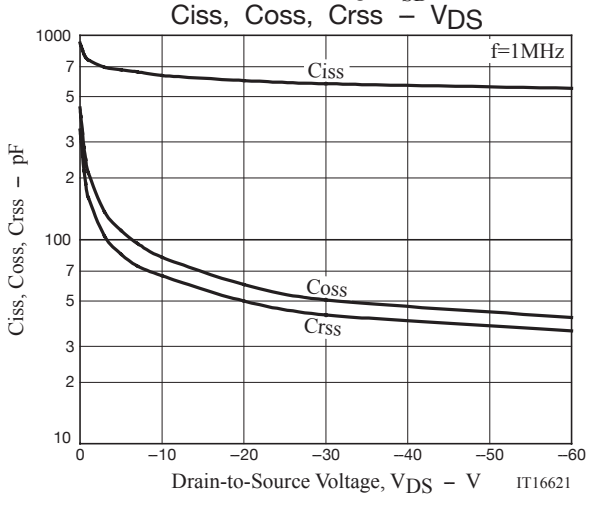

RDS(on) – VGS
Static Drain-to-Source On-State Resistance, RDS(on) – mΩ
Gate-to-Source Voltage, VGS – V
IT16616
Ta=25°C
ID= –1A
–2A


RDS(on) – Ta
Static Drain-to-Source On-State Resistance, RDS(on) – mΩ
Ambient Temperature, Ta – °C
IT16617
VGS= –4.5V, ID= –1A
VGS= –4.0V, ID= –1A
VGS= –10.0V, ID= –2A

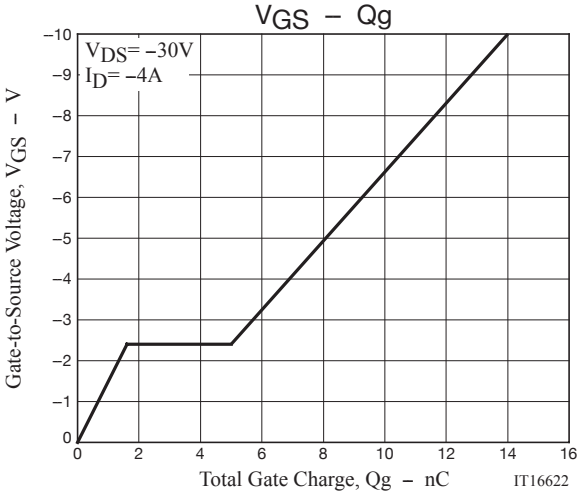

gFS – ID
Forward Transconductance, gFS – S
Drain Current, ID – A
HD16618
VDS= –10V
Ta= –25°C
75°C
25°C

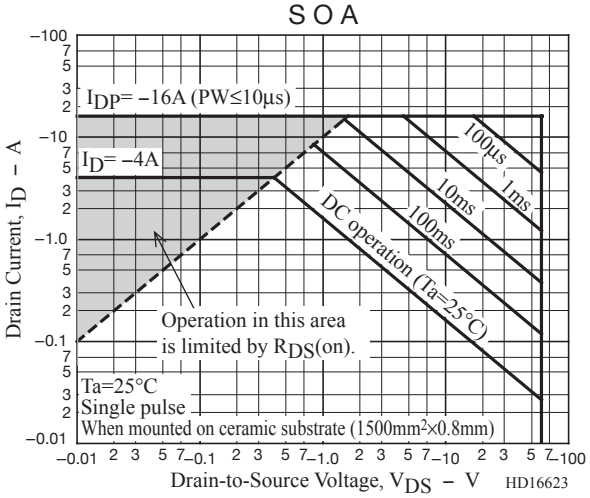

IS – VSD
Source Current, IS – A
Forward Diode Voltage, VSD – V
IT16619
VGS=0V
Ta=75°C
25°C
–25°C

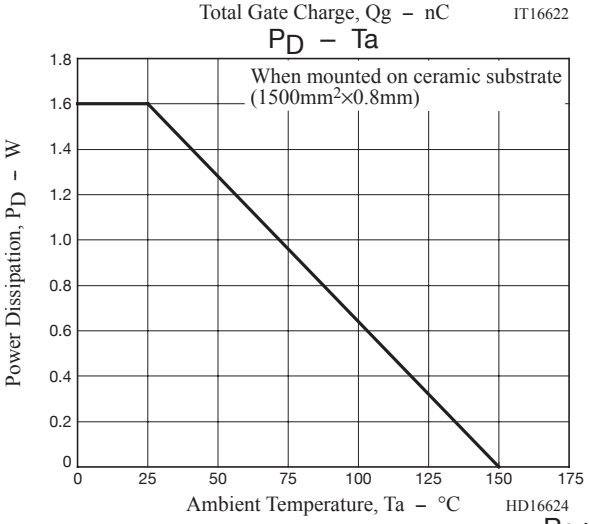

SW Time – ID
Switching Time, SW Time – ns
Drain Current, ID – A
IT16620
td(off)
tf
tr
td(on)
VDD= –30V
VGS= –10V

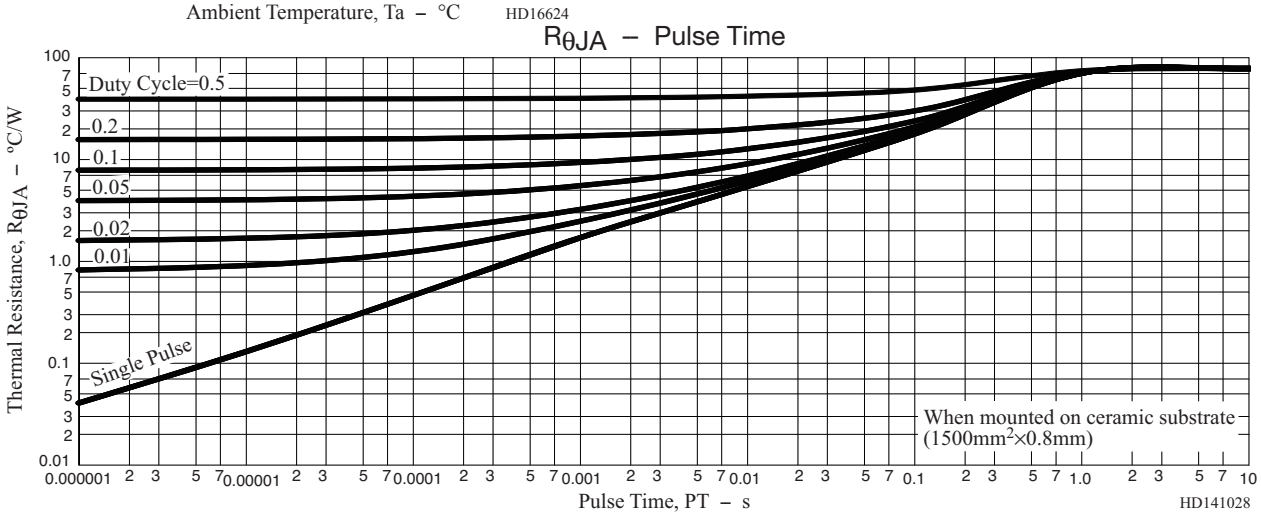

Ciss, Coss, Crss – VDS
Ciss, Coss, Crss – pF
Drain-to-Source Voltage, VDS – V
IT16621
f=1MHz
Ciss
Coss
Crss

CPH6354


VGS – Qg
VDS= –30V
ID= –4A
Gate-to-Source Voltage, VGS – V
Total Gate Charge, Qg – nC
IT16622


S O A
IDP= –16A (PW≤10μs)
ID= –4A
100μs
1ms
10ms
100ms
DC operation (Ta=25°C)
Operation in this area
is limited by RDS(on).
Ta=25°C
Single pulse
When mounted on ceramic substrate (1500mm2×0.8mm)
Drain Current, ID – A
Drain-to-Source Voltage, VDS – V
HD16623

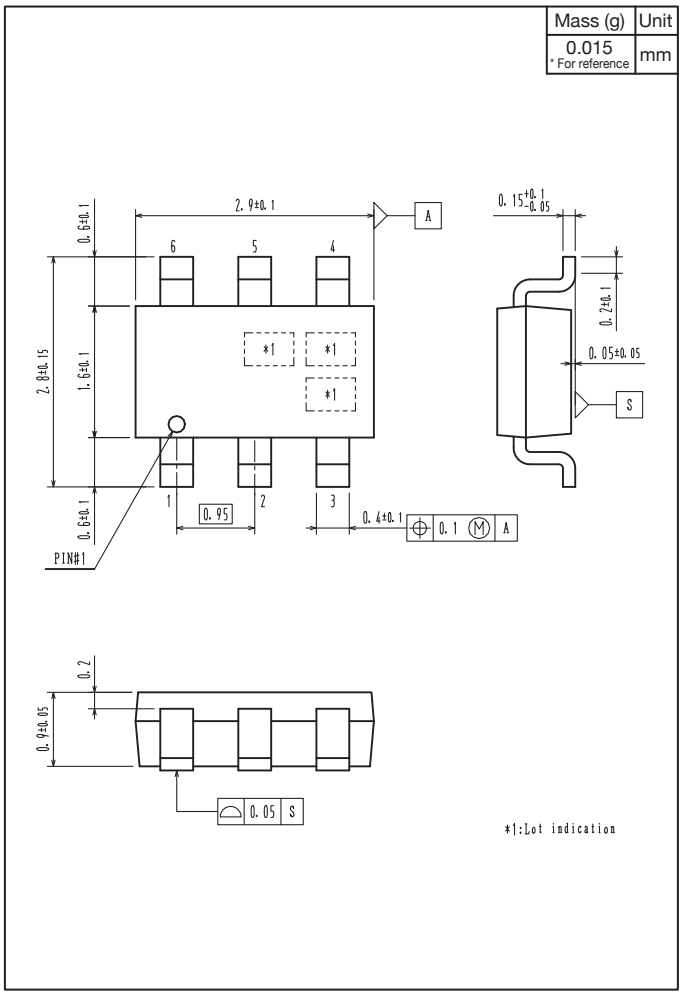

PD – Ta
When mounted on ceramic substrate
(1500mm2×0.8mm)
Power Dissipation, PD – W
Ambient Temperature, Ta – °C
HD16624


RθJA – Pulse Time
Duty Cycle=0.5
0.2
0.1
0.05
0.02
0.01
Single Pulse
When mounted on ceramic substrate
(1500mm2×0.8mm)
Thermal Resistance, RθJA – °C/W
Pulse Time, PT – s
HD141028

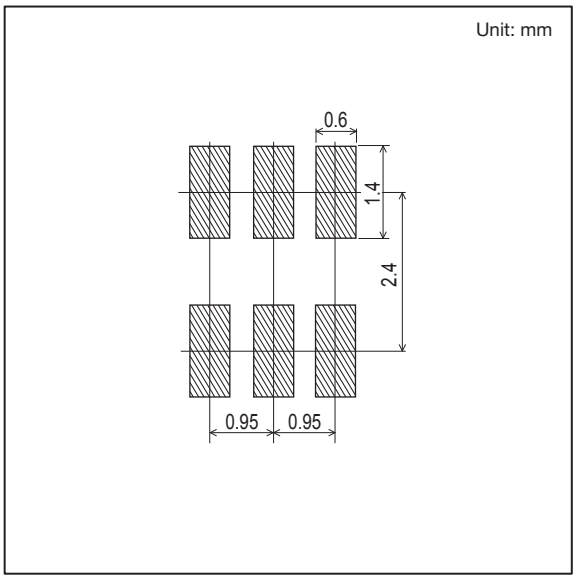
CPH6354

Outline Drawing

CPH6354-TL-H, CPH6354-TL-W



Land Pattern Example



Note on usage : Since the CPH6354 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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