Ordering number : ENA0922A

SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

P-Channel Silicon MOSFET

CPH3348 — General-Purpose Switching Device Applications

Features

- Ultrahigh-speed switching
- 1.8V drive

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSS}		−12	V
Gate-to-Source Voltage	V_{GSS}		±10	V
Drain Current (DC)	I_D		−3	A
Drain Current (Pulse)	I_{DP}	PW≤10μs, duty cycle≤1%	−12	A
Allowable Power Dissipation	P_D	When mounted on ceramic substrate (1200mm^2×0.8mm)	1.0	W
Channel Temperature	Tch		150	℃
Storage Temperature	Tstg		−55 to +150	℃

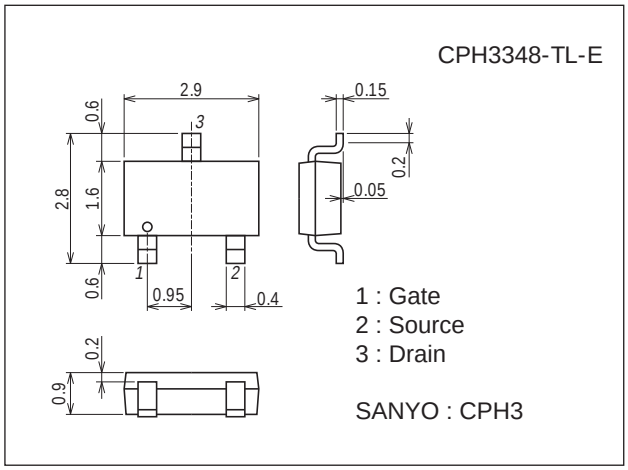
This product is designed to “ESD immunity < 200V*”, so please take care when handling.

* Machine Model

Package Dimensions

unit : mm (typ)

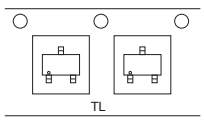
7015A-004



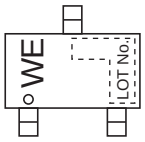
Product & Package Information

- Package : CPH3
- JEITA, JEDEC : SC-59, TO-236, SOT-23
- Minimum Packing Quantity : 3,000 pcs./reel

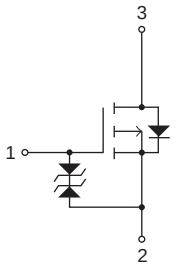
Packing Type: TL



Marking



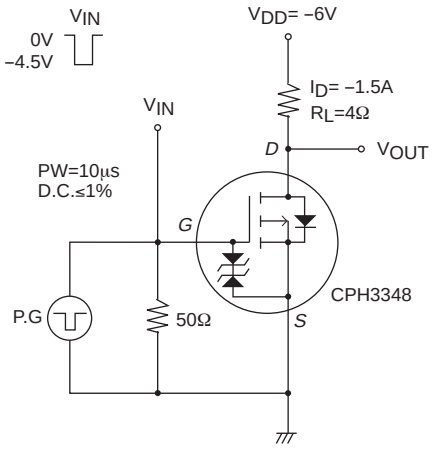
Electrical Connection



Electrical Characteristics at Ta=25°C

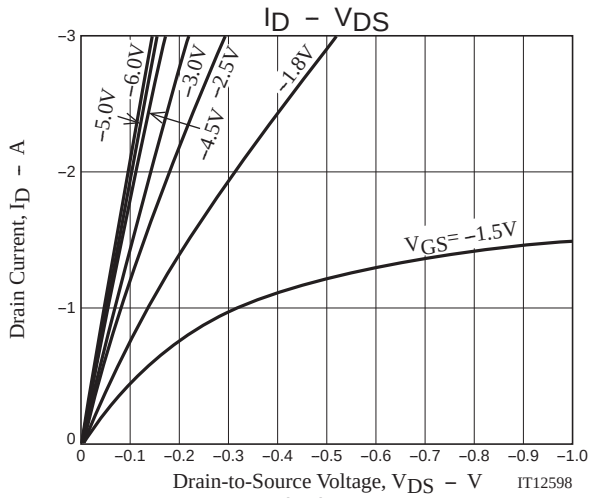
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	I_D=−1mA, V_{GS}=0V	−12			V
Zero-Gate Voltage Drain Current	I_{DSS}	V_{DS}=−12V, V_{GS}=0V			−10	μA
Gate-to-Source Leakage Current	I_{GSS}	V_{GS}=±8V, V_{DS}=0V			±10	μA
Cutoff Voltage	V_{GS}(off)	V_{DS}=−6V, I_D=−1mA	−0.4		−1.4	V
Forward Transfer Admittance	| yfs |	V_{DS}=−6V, I_D=−1.5A		4.3		S
Static Drain-to-Source On-State Resistance	R_{DS}(on)1	I_D=−1.5A, V_{GS}=−4.5V		54	70	mΩ
	R_{DS}(on)2	I_D=−0.8A, V_{GS}=−2.5V		80	115	mΩ
	R_{DS}(on)3	I_D=−0.3A, V_{GS}=−1.8V		125	215	mΩ
Input Capacitance	Ciss	V_{DS}=−6V, f=1MHz		405		pF
Output Capacitance	Coss			145		pF
Reverse Transfer Capacitance	Crss			100		pF
Turn-ON Delay Time	t_d(on)	See specified Test Circuit.		8.8		ns
Rise Time	t_r			80		ns
Turn-OFF Delay Time	t_d(off)			41		ns
Fall Time	t_f			50		ns
Total Gate Charge	Qg	V_{DS}=−6V, V_{GS}=−4.5V, I_D=−3A		5.6		nC
Gate-to-Source Charge	Qgs			0.7		nC
Gate-to-Drain “Miller” Charge	Qgd			1.6		nC
Diode Forward Voltage	V_{SD}	I_S=−3A, V_{GS}=0V		−0.85	−1.2	V

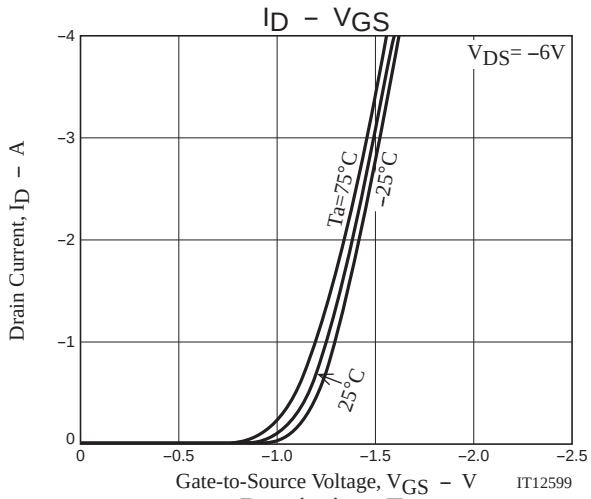
Switching Time Test Circuit

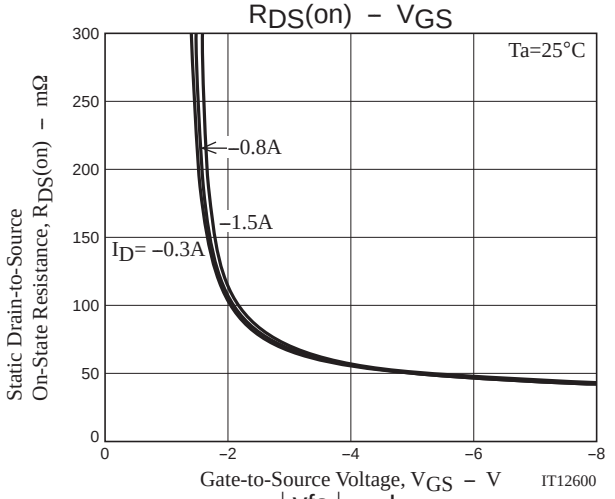


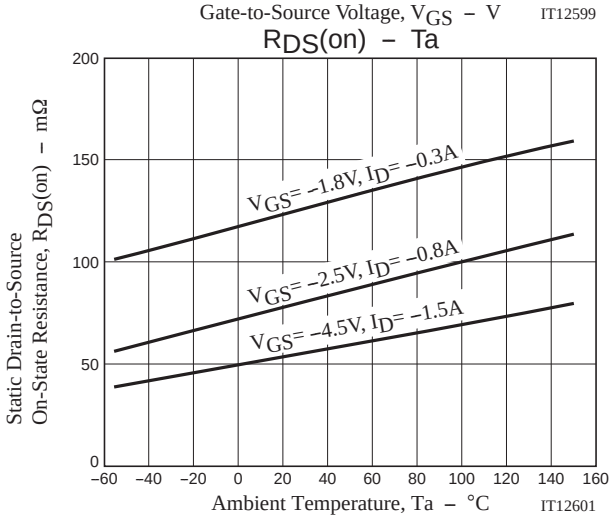
Ordering Information

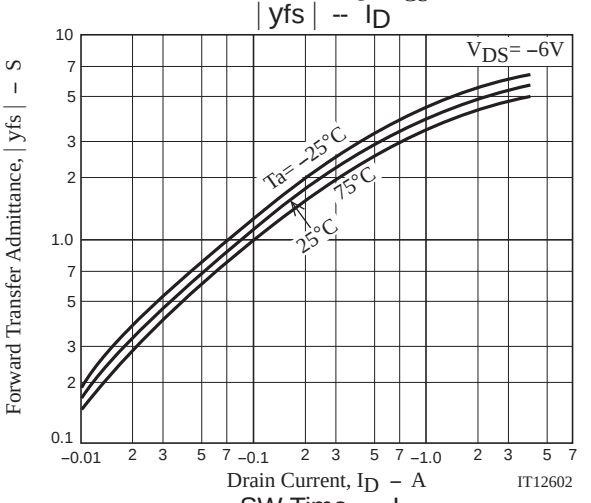
Device	Package	Shipping	memo
CPH3348-TL-E	CPH3	3,000pcs./reel	Pb Free

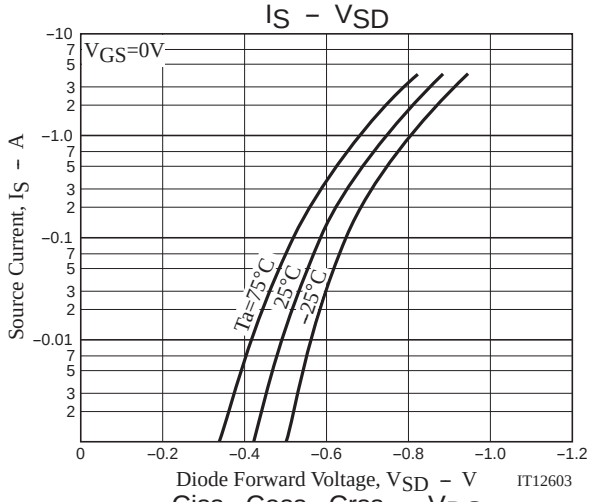

ID – VDS
Drain Current, ID – A
–5.0V
–6.0V
–3.0V
–4.5V
–2.5V
–1.8V
VGS= –1.5V
Drain-to-Source Voltage, VDS – V
IT12598

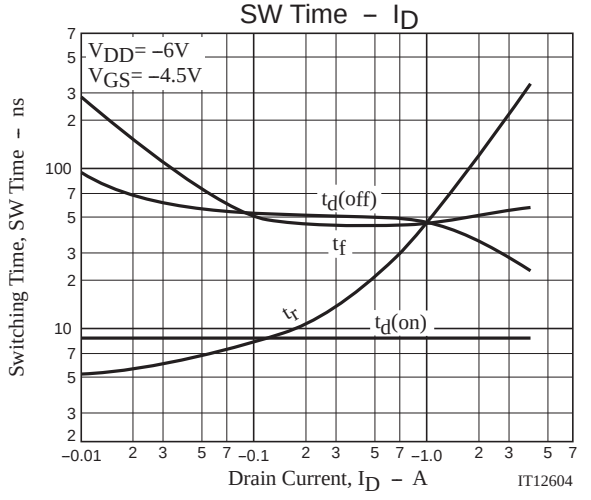

ID – VGS
VDS= –6V
Drain Current, ID – A
Ta=75°C
–25°C
25°C
Gate-to-Source Voltage, VGS – V
IT12599

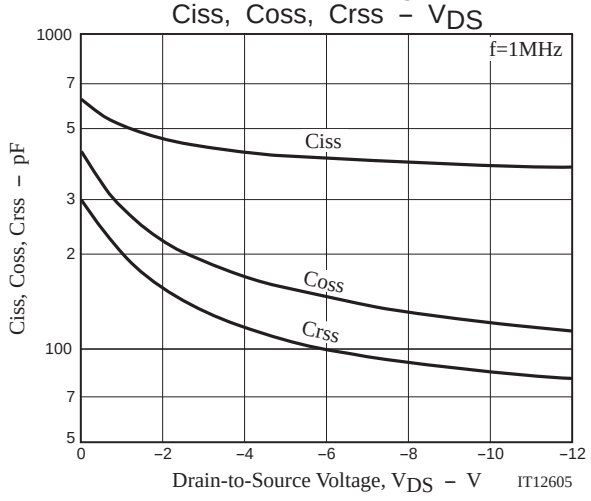

RDS(on) – VGS
Ta=25°C
Static Drain-to-Source On-State Resistance, RDS(on) – mΩ
–0.8A
–1.5A
ID= –0.3A
Gate-to-Source Voltage, VGS – V
IT12600

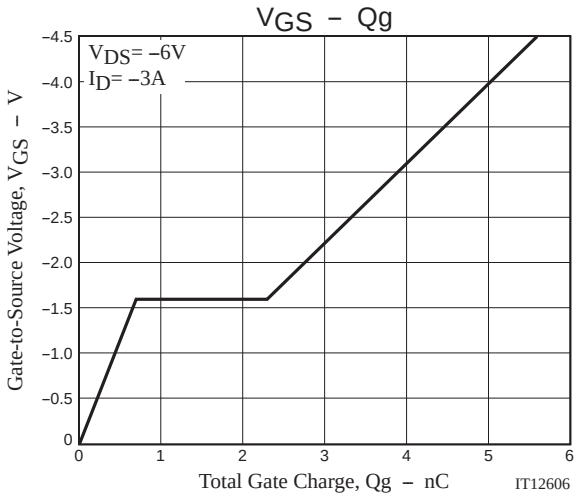

RDS(on) – Ta
Static Drain-to-Source On-State Resistance, RDS(on) – mΩ
VGS= –1.8V, ID= –0.3A
VGS= –2.5V, ID= –0.8A
VGS= –4.5V, ID= –1.5A
Ambient Temperature, Ta – °C
IT12601

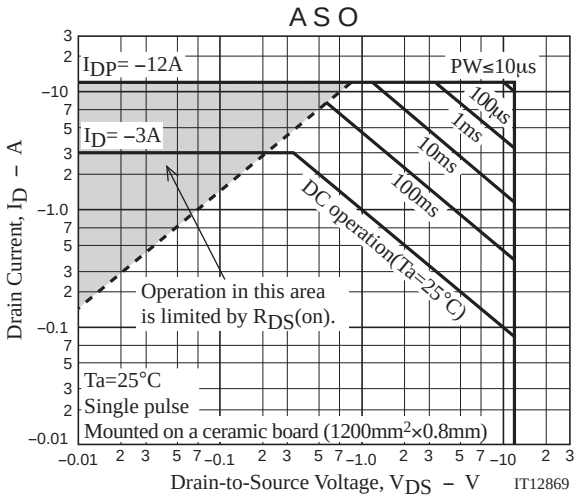

| yfs | – ID
VDS= –6V
Forward Transfer Admittance, | yfs | – S
Ta= –25°C
75°C
25°C
Drain Current, ID – A
IT12602

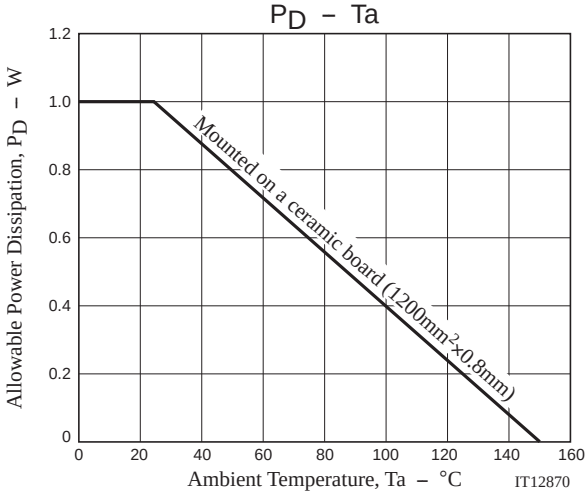

IS – VSD
VGS=0V
Source Current, IS – A
Ta=75°C
25°C
–25°C
Diode Forward Voltage, VSD – V
IT12603


SW Time – ID
VDD= –6V
VGS= –4.5V
Switching Time, SW Time – ns
td(off)
tf
tr
td(on)
Drain Current, ID – A
IT12604


Ciss, Coss, Crss – VDS
f=1MHz
Ciss, Coss, Crss – pF
Ciss
Coss
Crss
Drain-to-Source Voltage, VDS – V
IT12605


VGS – Qg
VDS= –6V
ID= –3A
Gate-to-Source Voltage, VGS – V
Total Gate Charge, Qg – nC
IT12606


A S O
IDP= –12A
PW≤10μs
ID= –3A
100μs
1ms
10ms
100ms
DC operation(Ta=25°C)
Operation in this area
is limited by RDS(on).
Ta=25°C
Single pulse
Mounted on a ceramic board (1200mm2×0.8mm)
Drain Current, ID – A
Drain-to-Source Voltage, VDS – V
IT12869


PD – Ta
Mounted on a ceramic board (1200mm2×0.8mm)
Allowable Power Dissipation, PD – W
Ambient Temperature, Ta – °C
IT12870

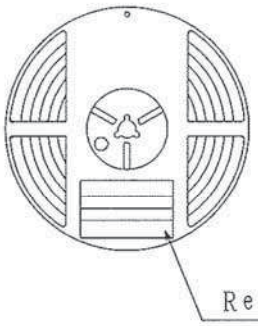
Embossed Taping Specification

CPH3348-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)
CPH3	CPH3	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

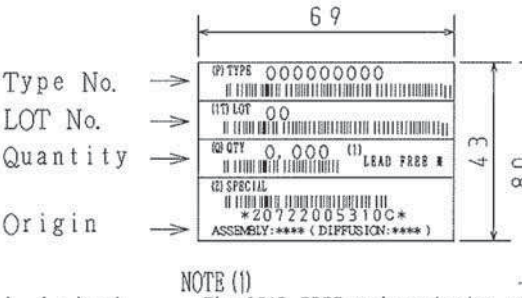
Packing method



Reel label

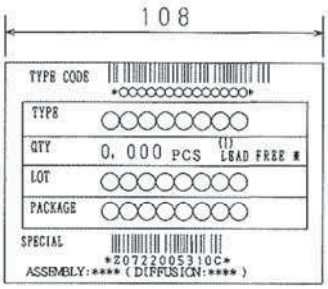
Reel label, Inner box label

(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.



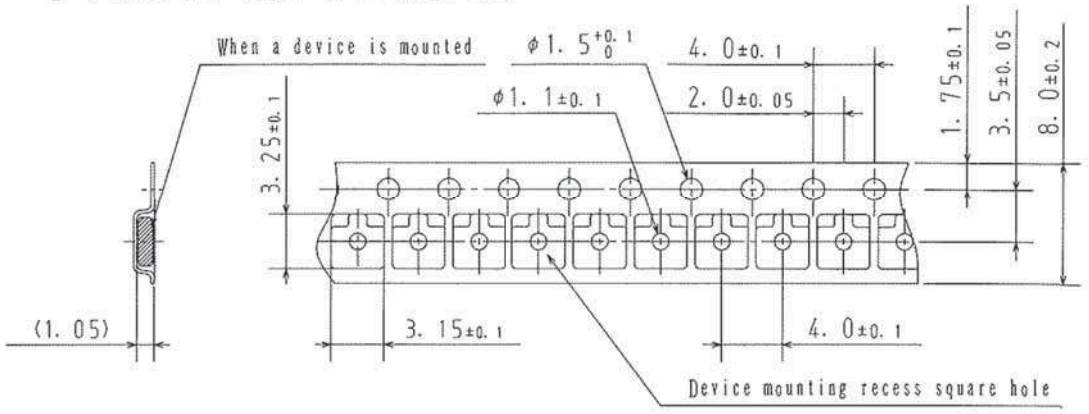
NOTE (1)

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

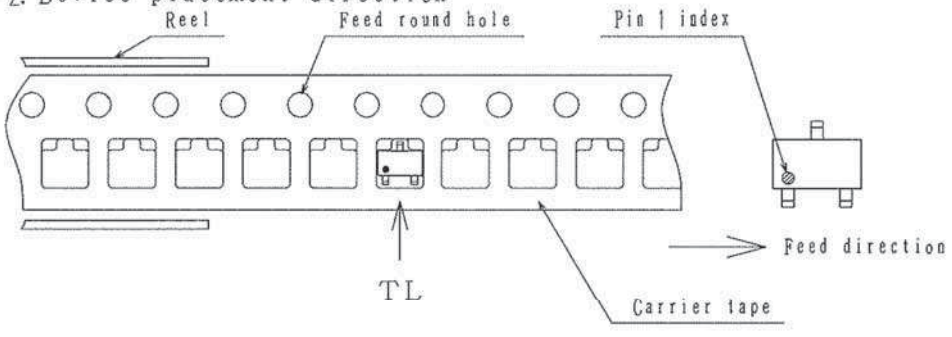
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

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



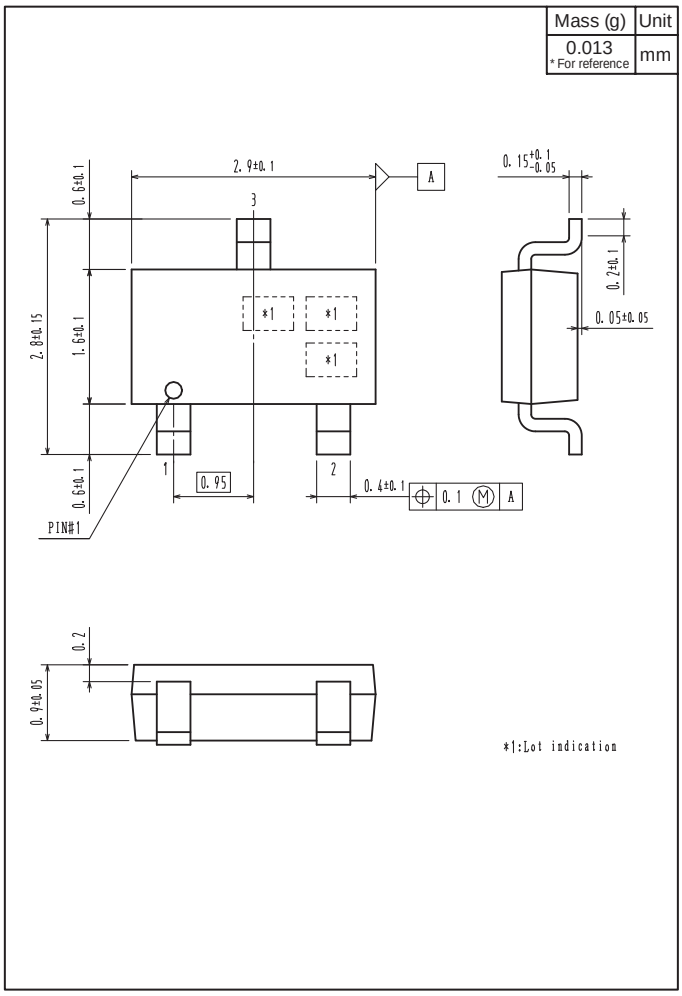
2-2. Device placement direction



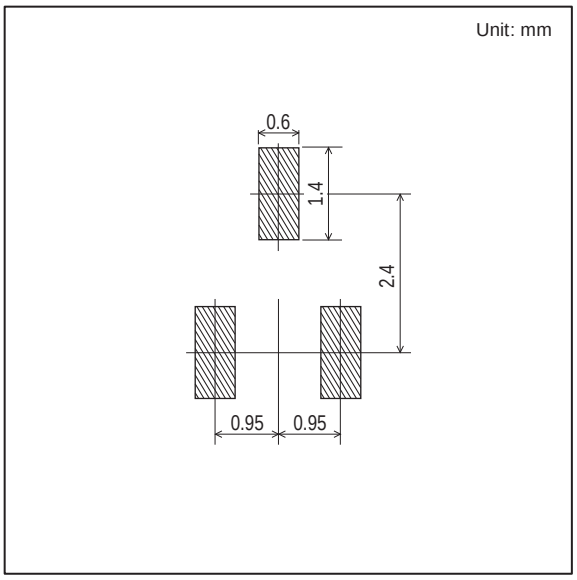
Those with one electrode terminal on the feed hole side·····TL

Outline Drawing

CPH3348-TL-E



Land Pattern Example



Note on usage : Since the CPH3348 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

This catalog provides information as of June, 2012. Specifications and information herein are subject to change without notice.