



EFC4618R-P

N-Channel Power MOSFET 24V, 6A, 23mΩ, Dual EFCP

ON Semiconductor®

<http://onsemi.com>

Features

- 2.5V drive
- Best suited for LiB charging and discharging switch
- Common-drain type
- Protection diode in
- Halogen free compliance

Specifications

Absolute Maximum Ratings at Ta=25°C

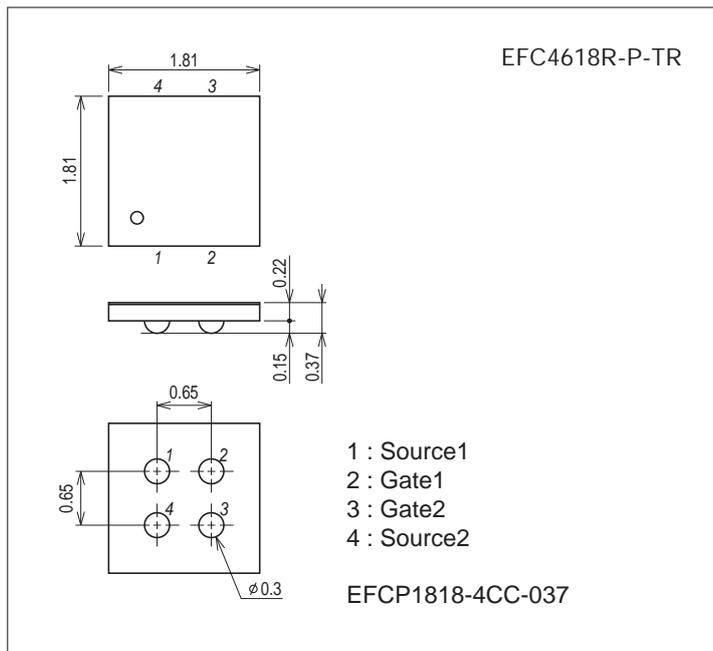
Parameter	Symbol	Conditions	Ratings	Unit
Source-to-Source Voltage	V _{SSS}		24	V
Gate-to-Source Voltage	V _{GSS}		±12	V
Source Current (DC)	I _S		6	A
Source Current (Pulse)	I _{SP}	PW≤10μs, duty cycle≤1%	60	A
Total Dissipation	P _T	When mounted on ceramic substrate (5000mm ² ×0.8mm)	1.6	W
Channel Temperature	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)

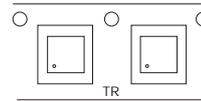
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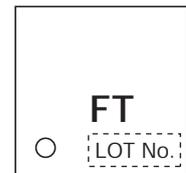
Product & Package Information

- Package : EFCP
- JEITA, JEDEC : -
- Minimum Packing Quantity : 5,000 pcs./reel

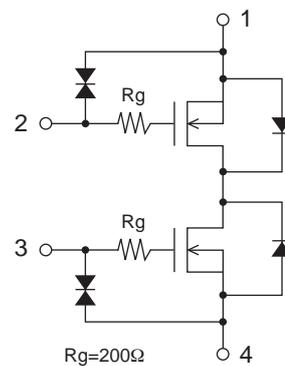
Packing Type : TR



Marking



Electrical Connection



EFC4618R-P

Electrical Characteristics at Ta=25°C

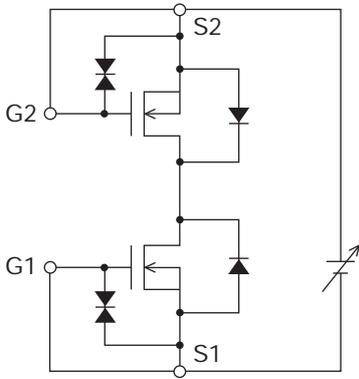
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Source-to-Source Breakdown Voltage	$V_{(BR)SSS}$	$I_S=1mA, V_{GS}=0V$ Test Circuit 1	24			V
Zero-Gate Voltage Source Current	I_{SSS}	$V_{SS}=20V, V_{GS}=0V$ Test Circuit 1			1	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 8V, V_{SS}=0V$ Test Circuit 2			± 10	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{SS}=10V, I_S=1mA$ Test Circuit 3	0.5		1.3	V
Forward Transfer Admittance	$ y_{fs} $	$V_{SS}=10V, I_S=3A$ Test Circuit 4		6.5		S
Static Source-to-Source On-State Resistance	$R_{SS(on)1}$	$I_S=3A, V_{GS}=4.5V$ Test Circuit 5	13.5	19.8	23	m Ω
	$R_{SS(on)2}$	$I_S=3A, V_{GS}=4.0V$ Test Circuit 5	14	20.5	24	m Ω
	$R_{SS(on)3}$	$I_S=3A, V_{GS}=3.7V$ Test Circuit 5	14.5	21	25.5	m Ω
	$R_{SS(on)4}$	$I_S=3A, V_{GS}=3.1V$ Test Circuit 5	14.9	23	30	m Ω
	$R_{SS(on)5}$	$I_S=3A, V_{GS}=2.5V$ Test Circuit 5	18.5	27	35	m Ω
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit. Test Circuit 7		200		ns
Rise Time	t_r			815		ns
Turn-OFF Delay Time	$t_{d(off)}$			1840		ns
Fall Time	t_f			1770		ns
Total Gate Charge	Q_g		$V_{SS}=10V, V_{GS}=4.5V, I_S=6A$		25.4	
Forward Source-to-Source Voltage	$V_{F(S-S)}$	$I_S=3A, V_{GS}=0V$ Test Circuit 6		0.76	1.2	V

Ordering Information

Device	Package	Shipping	memo
EFC4618R-P-TR	EFCP	5,000pcs./reel	Pb Free and Halogen Free

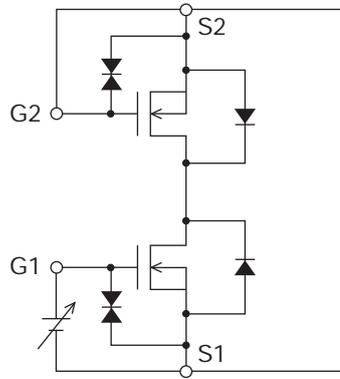
Test circuits are example of measuring FET1 side

Test Circuit 1
 V_{SSS} / I_{SSS}



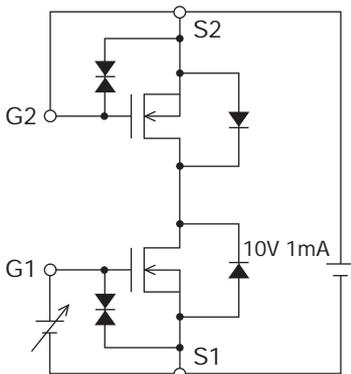
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Test Circuit 2
 $I_{GSS(+)} / (-)$



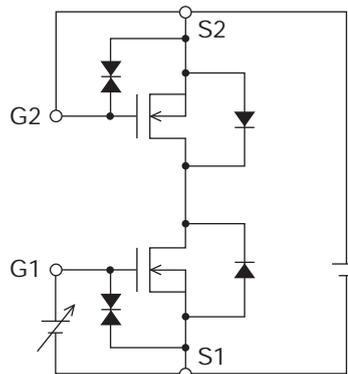
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Test Circuit 3
 $V_{GS(off)}$



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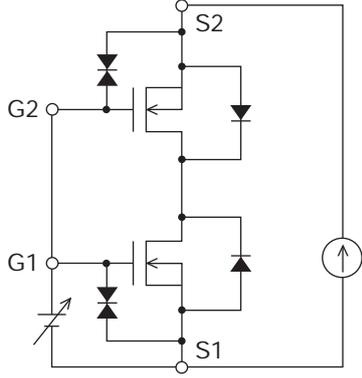
Test Circuit 4
 $|y_{fs}|$



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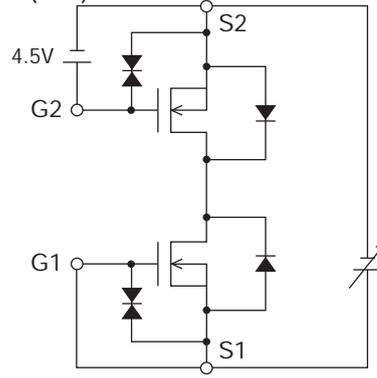
* Note: Connect the measurement terminal reversely if you want to measure the FET2 side.

Test Circuit 5
RSS(on)



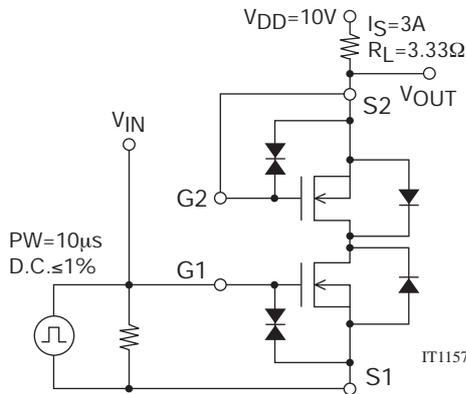
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Test Circuit 6
VF(S-S)



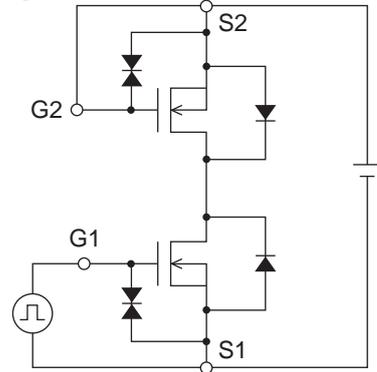
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Test Circuit 7
td(on), tr, td(off), tf



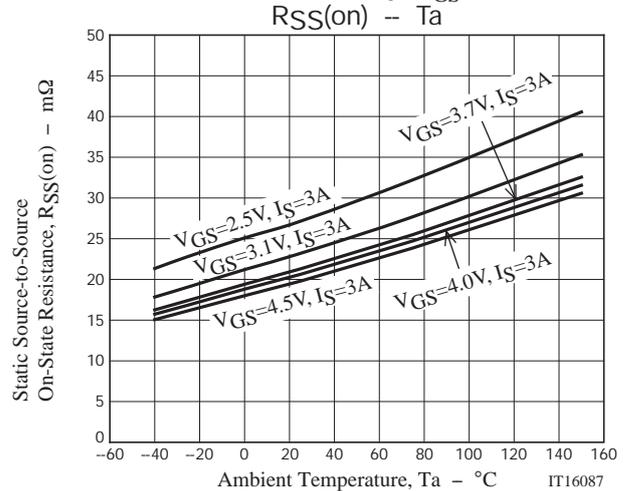
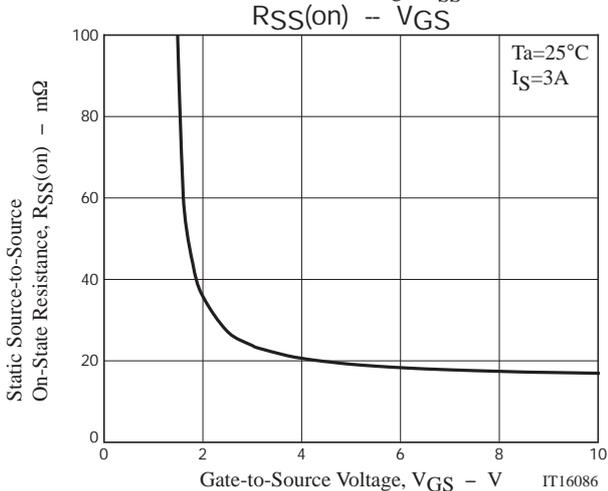
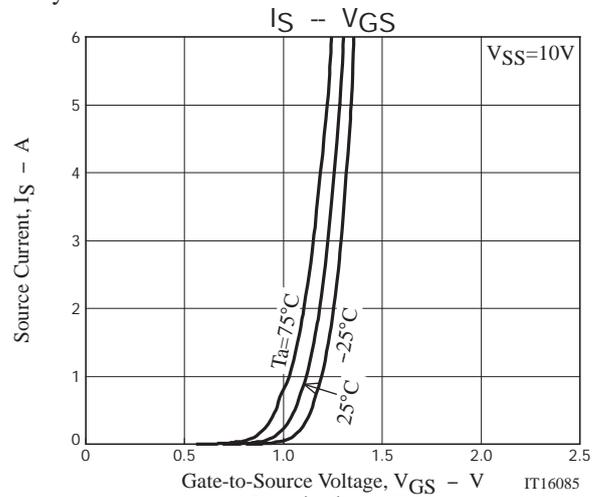
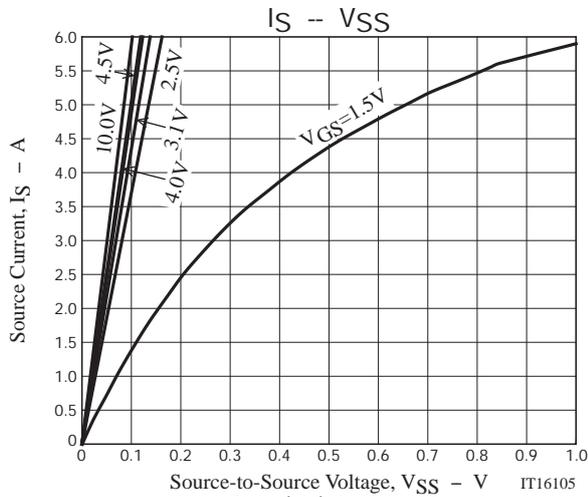
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Test Circuit 8
Qg

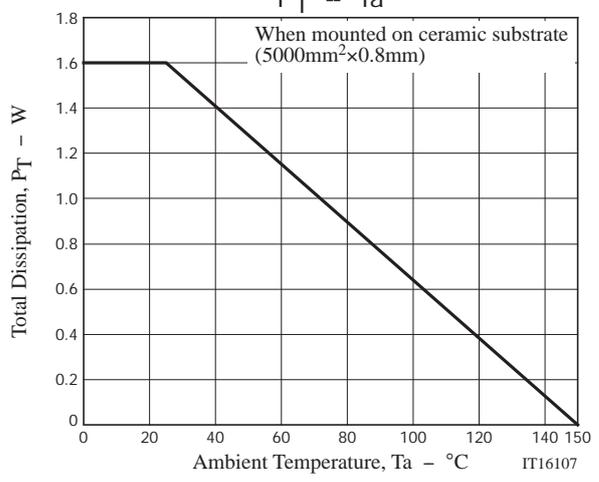
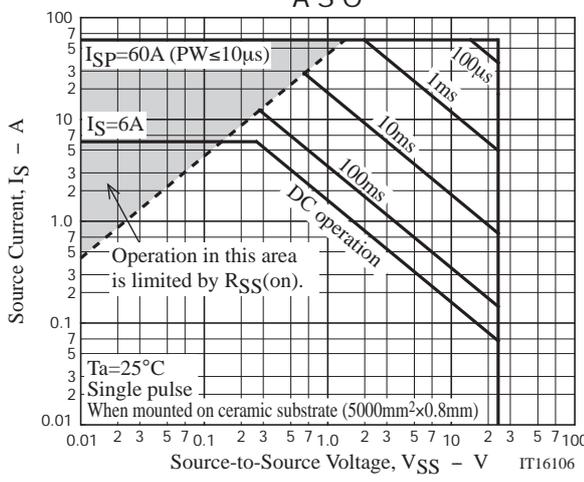
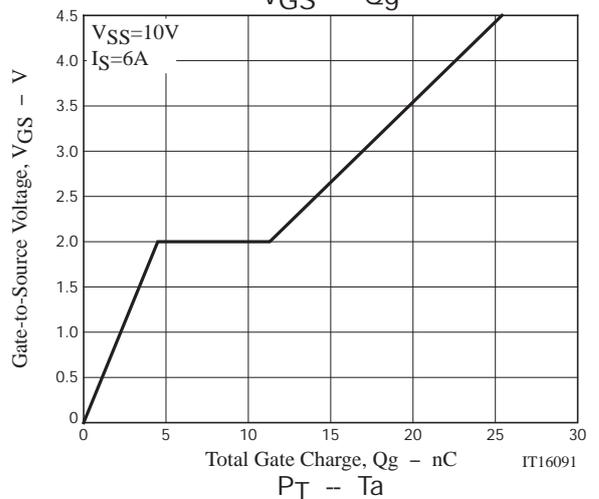
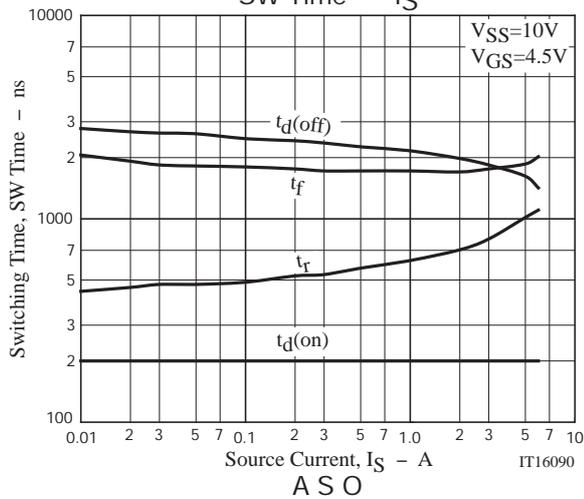
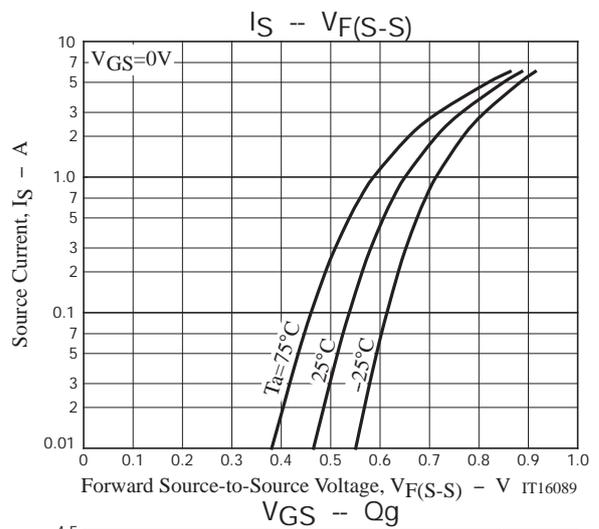
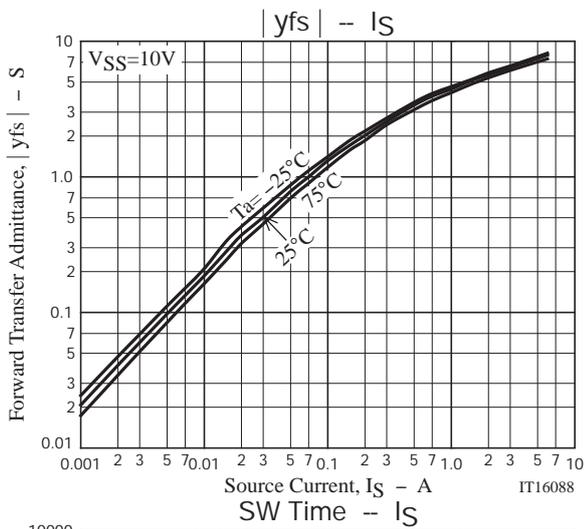


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* Note: Connect the measurement terminal reversely if you want to measure the FET2 side.



EFC4618R-P



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Taping Specification

EFC4618R-P-TR

1. Packing Format

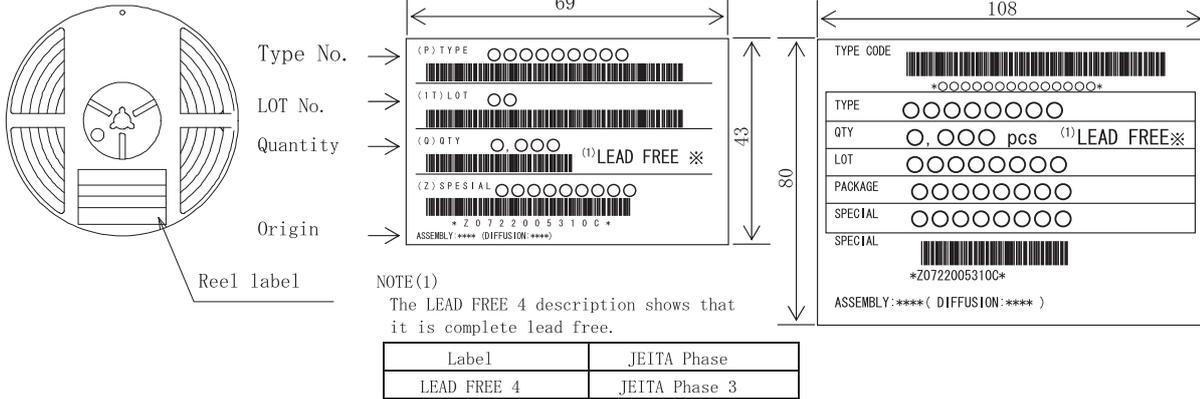
Package Name	Maximum Number of devices contained (pcs)			Packing format	
	Reel	Inner box	Outer box	Inner BOX (C-1)	Outer BOX (A-7)
EFCP1818-4CC-037	5,000	25,000	150,000	5 reels contained Dimensions :mm(external) 183 X 72 X 185	6 inner boxes contained Dimensions :mm(external) 440 X 195 X 210

Packing method

Reel label, Inner box label (unit: mm)

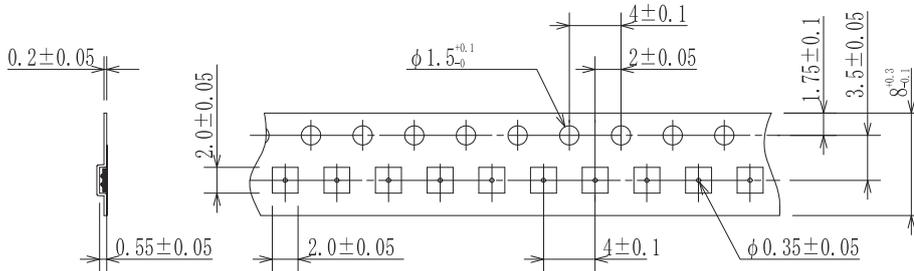
Outer box label

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

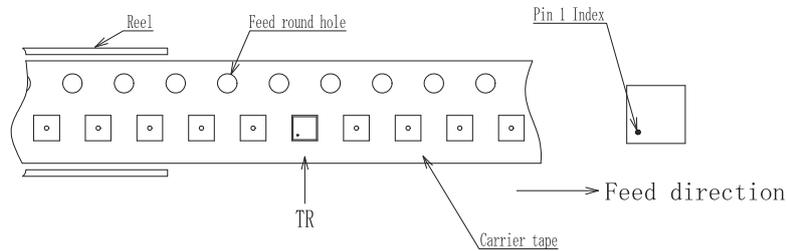


2. Taping configuration

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



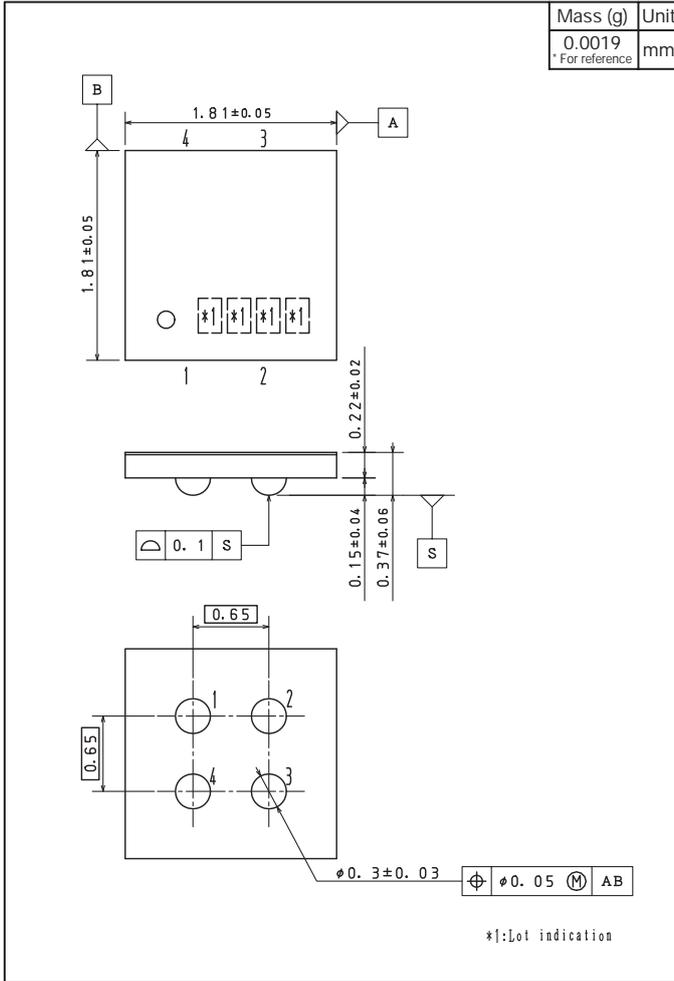
2-2. Device placement direction



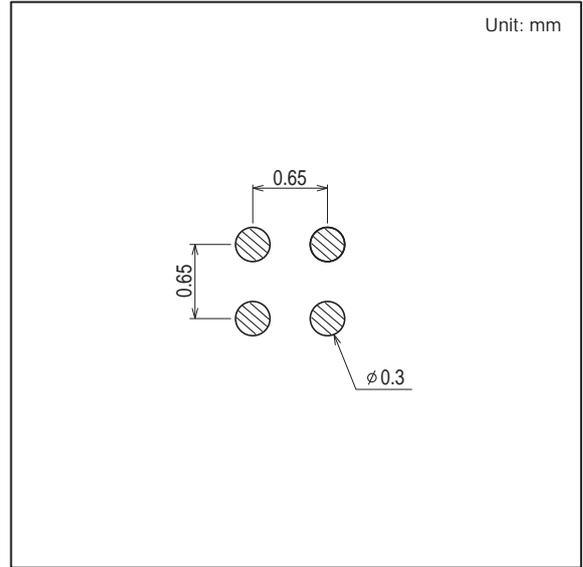
Packing type.....TR

EFC4618R-P

Outline Drawing EFC4618R-P-TR



Land Pattern Example



Note on usage : Since the EFC4618R-P is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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