



SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

N-Channel Silicon MOSFET

EFC4612R — General-Purpose Switching Device Applications

Features

- 2.5V drive
- Built-in gate protection resistor
- Best suited for LiB charging and discharging switch
- Common-drain type
- Halogen free compliance

Specifications

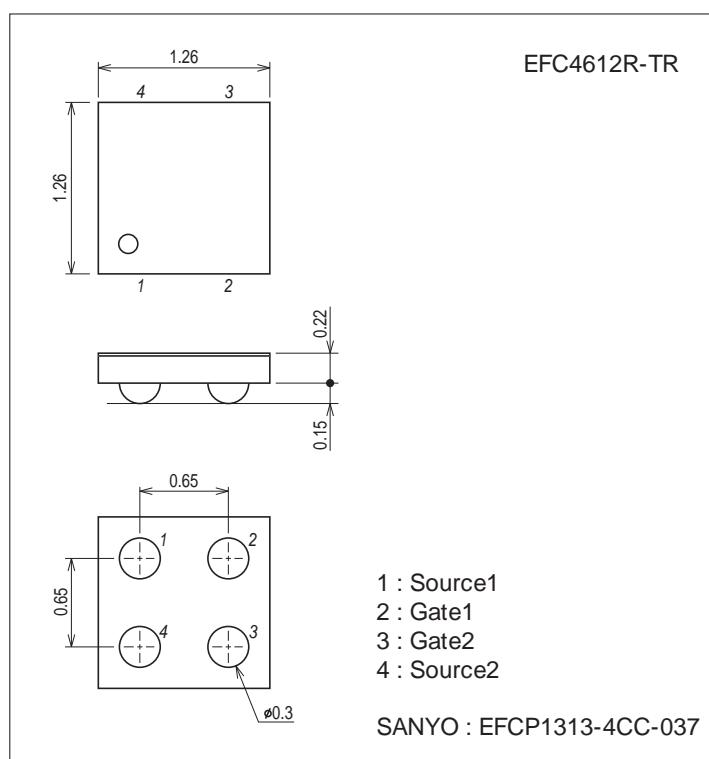
Absolute Maximum Ratings at Ta=25°C

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

Package Dimensions

unit : mm (typ)

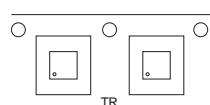
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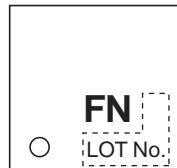
Product & Package Information

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

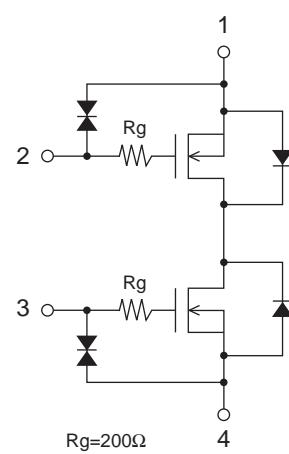
Taping Type : TR



Marking



Electrical Connection



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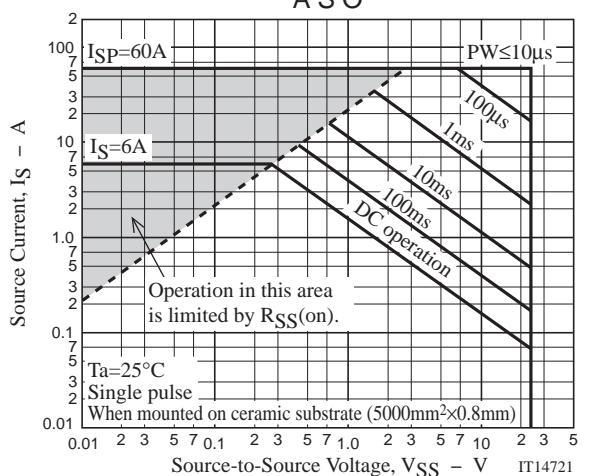
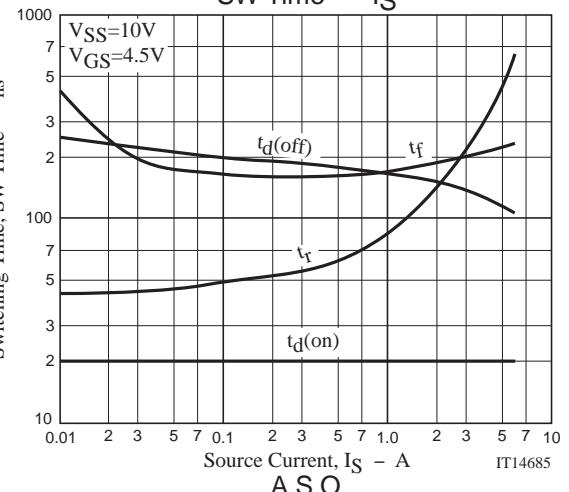
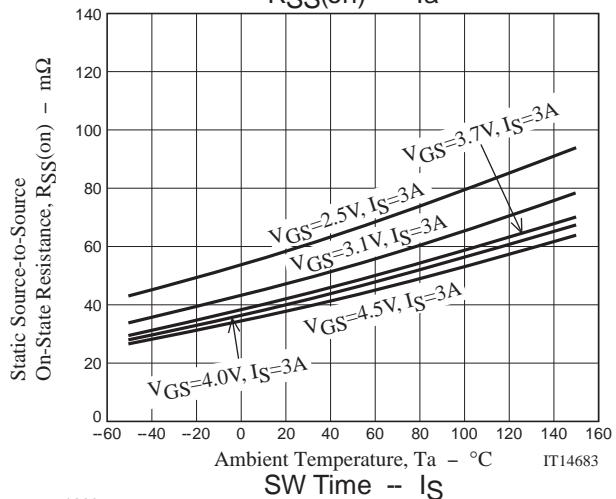
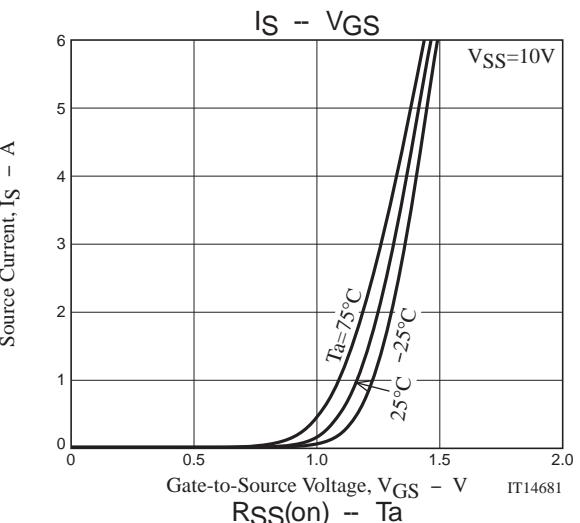
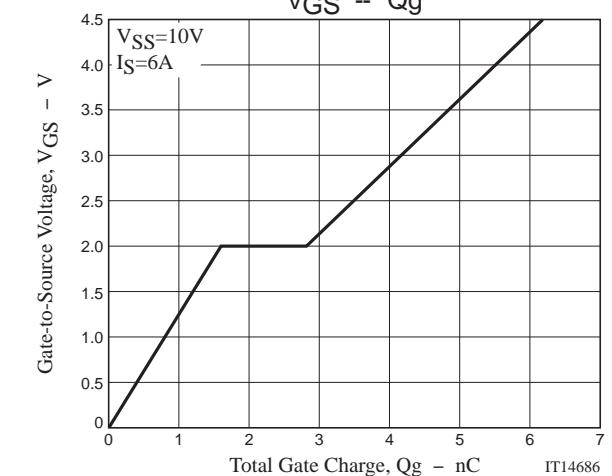
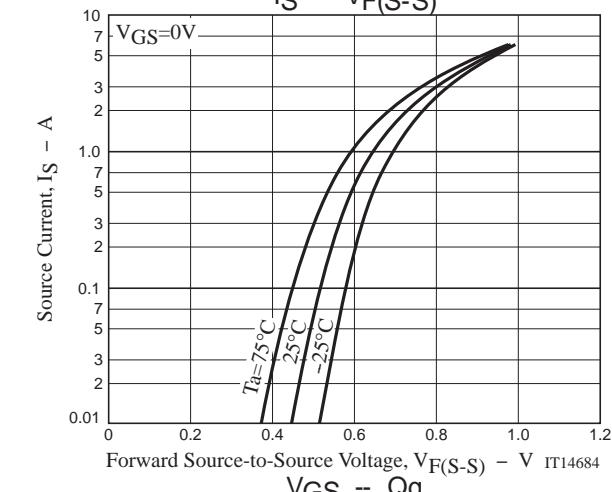
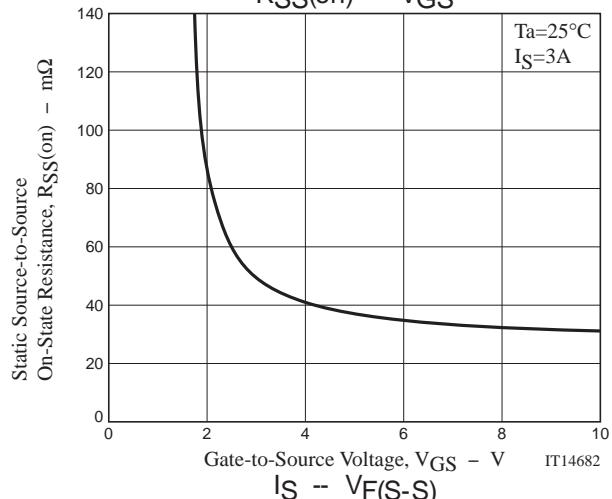
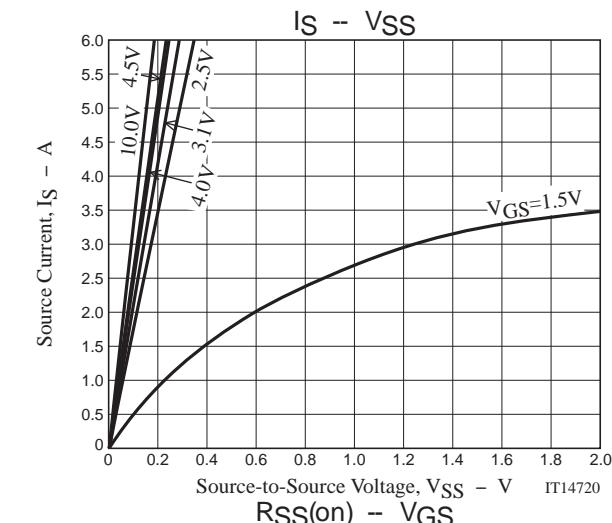
<http://www.sanyosemi.com/en/network/>

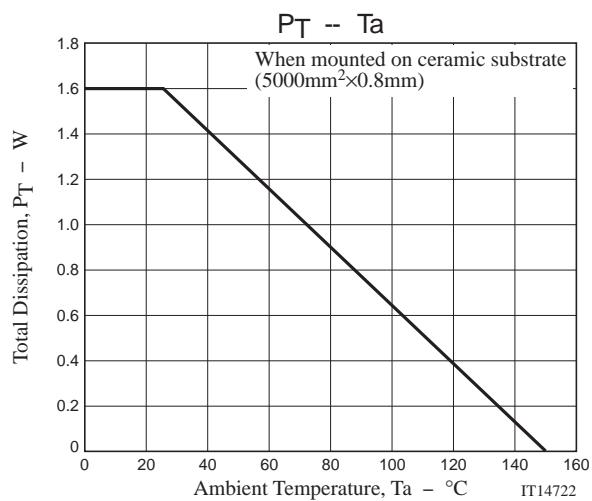
Electrical Characteristics at $T_a=25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings			Unit	
			min	typ	max		
Source-to-Source Breakdown Voltage	$V_{(BR)SSS}$	$I_S=1\text{mA}$, $V_{GS}=0\text{V}$	Test Circuit 1	24		V	
Zero-Gate Voltage Source Current	I_{SSS}	$V_{SS}=20\text{V}$, $V_{GS}=0\text{V}$	Test Circuit 1		1	μA	
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 8\text{V}$, $V_{SS}=0\text{V}$	Test Circuit 2		± 10	μA	
Cutoff Voltage	$V_{GS(\text{off})}$	$V_{SS}=10\text{V}$, $I_S=1\text{mA}$	Test Circuit 3	0.5		V	
Forward Transfer Admittance	$ y_{fs} $	$V_{SS}=10\text{V}$, $I_S=3\text{A}$	Test Circuit 4		3.1	S	
Static Source-to-Source On-State Resistance	$R_{SS(\text{on})1}$	$I_S=3\text{A}$, $V_{GS}=4.5\text{V}$	Test Circuit 5	24	39	$\text{m}\Omega$	
	$R_{SS(\text{on})2}$	$I_S=3\text{A}$, $V_{GS}=4.0\text{V}$	Test Circuit 5	25	41	$\text{m}\Omega$	
	$R_{SS(\text{on})3}$	$I_S=3\text{A}$, $V_{GS}=3.7\text{V}$	Test Circuit 5	27.5	43	$\text{m}\Omega$	
	$R_{SS(\text{on})4}$	$I_S=3\text{A}$, $V_{GS}=3.1\text{V}$	Test Circuit 5	31.5	48	$\text{m}\Omega$	
	$R_{SS(\text{on})5}$	$I_S=3\text{A}$, $V_{GS}=2.5\text{V}$	Test Circuit 5	33.5	58	$\text{m}\Omega$	
Turn-ON Delay Time	$t_{d(\text{on})}$	See specified Test Circuit.	Test Circuit 7		20	ns	
Rise Time	t_r				230	ns	
Turn-OFF Delay Time	$t_{d(\text{off})}$				130	ns	
Fall Time	t_f				210	ns	
Total Gate Charge	Q_g	$V_{SS}=10\text{V}$, $V_{GS}=4.5\text{V}$, $I_S=6\text{A}$			7	nC	
Forward Source-to-Source Voltage	$V_{F(S-S)}$	$I_S=3\text{A}$, $V_{GS}=0\text{V}$	Test Circuit 6		0.8	1.2	V

Ordering Information

Device	Package	Shipping	memo
EFC4612R-TR	EFCP	5,000pcs./reel	Pb Free and Halogen Free



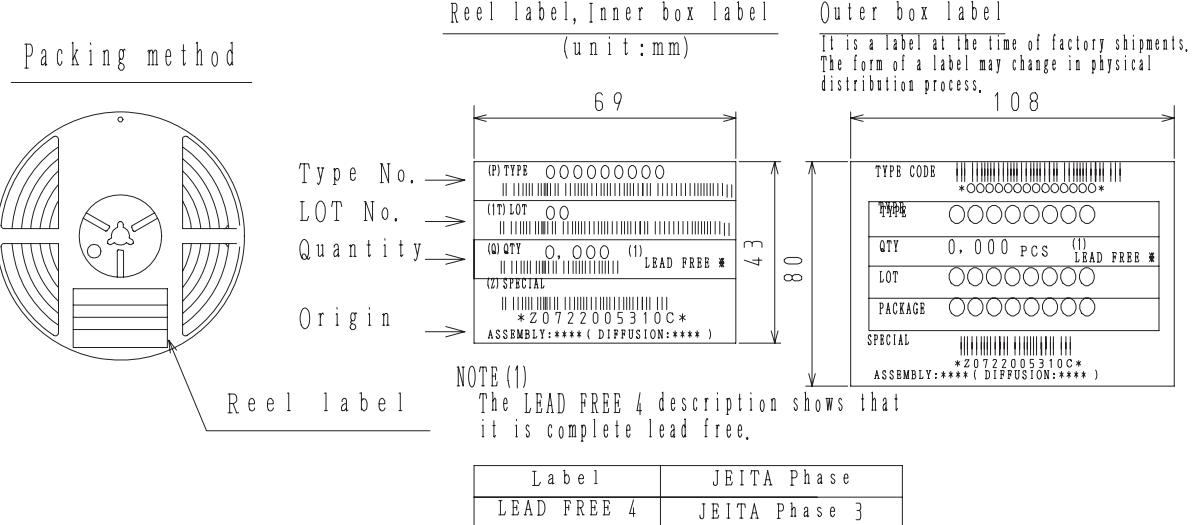


Taping Specification

EFC4612R-TR

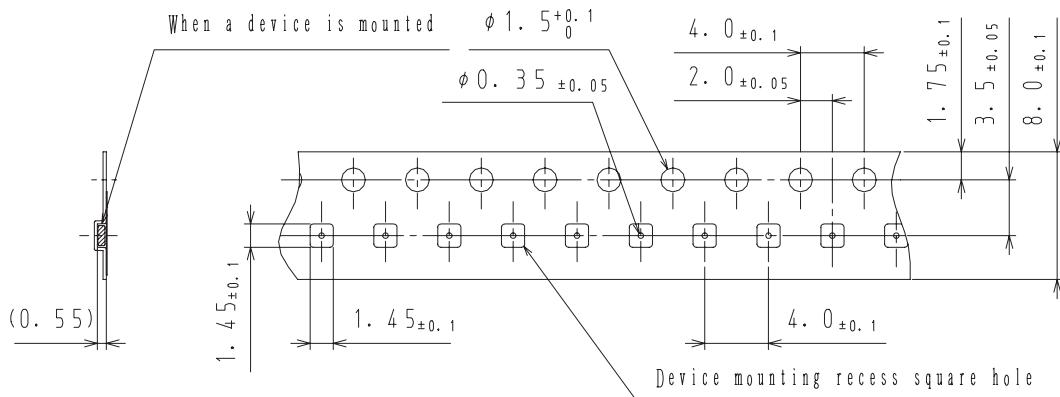
1. Packing Format

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)
BFCP1313 -4CC-037	145145×055	5,000	25,000	150,000	5 reels contained Dimensions:mm (external) 183×72×185	6 inner boxes contained Dimensions:mm (external) 440×195×210

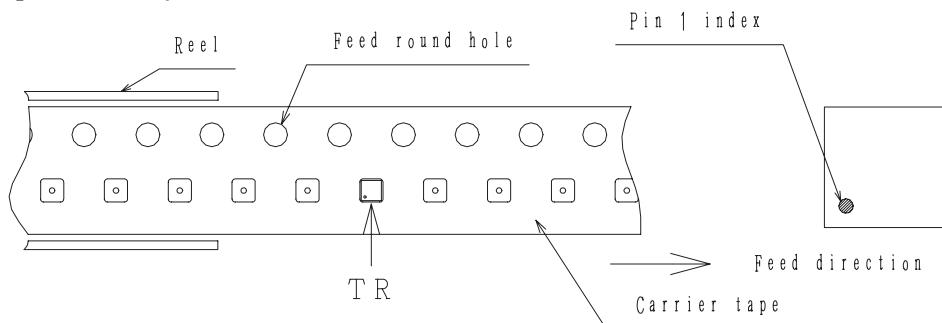


2. Taping configuration

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

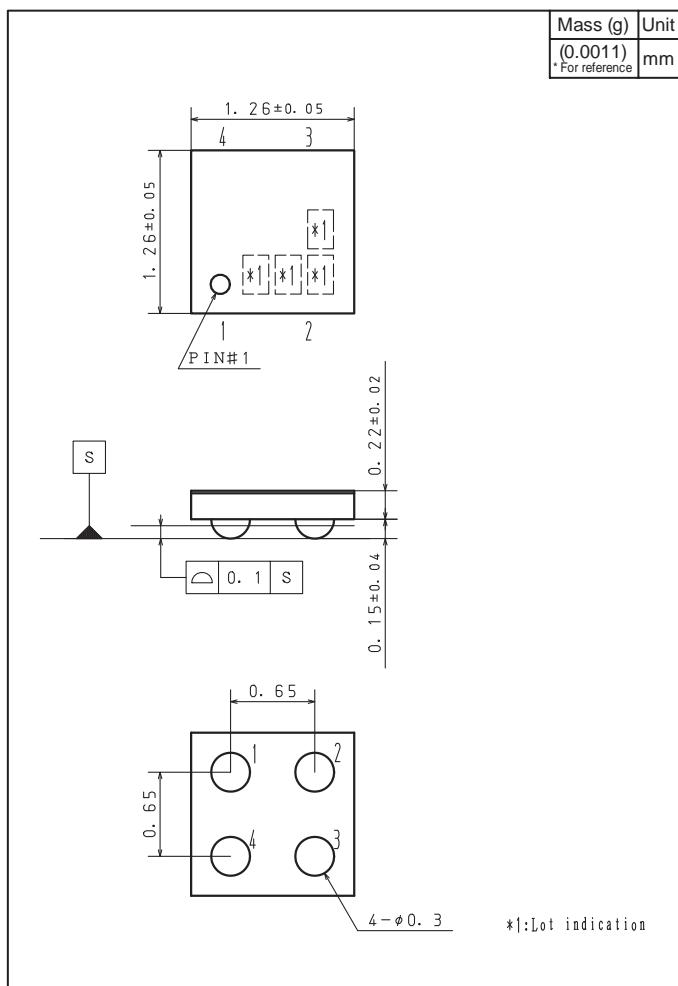
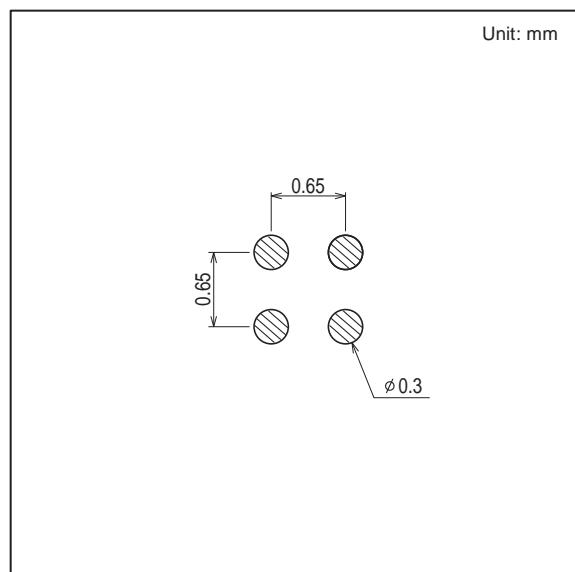


2-2. Device placement direction



Outline Drawing

EFC4612R-TR

**Land Pattern Example**

Note on usage : Since the EFC4612R is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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