

SANYO Semiconductors DATA SHEET

An ON Semiconductor Company

N-Channel Silicon MOSFET

EFC6601R — Lithium-ion battery charging and discharging switch

Features

- 2.5V drive
- · Common-drain type
- · 2KV ESD HBM

- · Protection diode in
- · Halogen free compliance

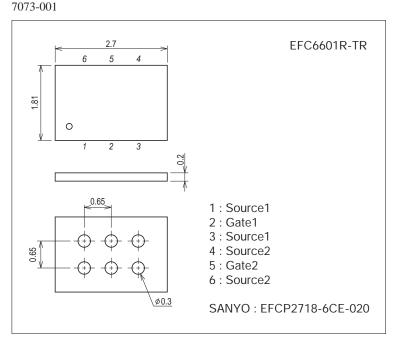
Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Source-to-Source Voltage	VSSS		24	V
Gate-to-Source Voltage	VGSS		±12	V
Source Current (DC)	IS		13	Α
Source Current (Pulse)	ISP	PW≤10μs, duty cycle≤1%	60	Α
Total Dissipation	PT	When mounted on ceramic substrate (5000mm ² ×0.8mm)	2.0	W
Channel Temperature	Tch		150	°C
Storage Temperature	Tstg		-55 to +150	°C

Package Dimensions

unit: mm (typ)



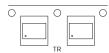
Product & Package Information

• Package : EFCP

• JEITA, JEDEC :-

• Minimum Packing Quantity : 5,000 pcs./reel

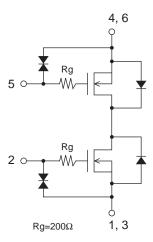
Taping Type: TR



Marking



Electrical Connection



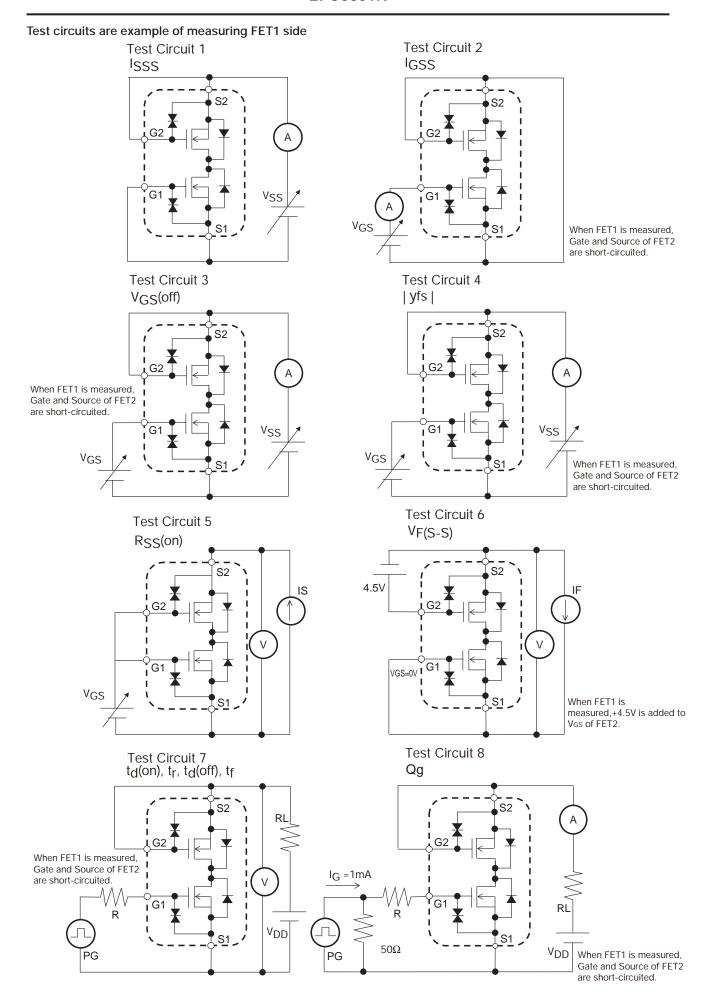
EFC6601R

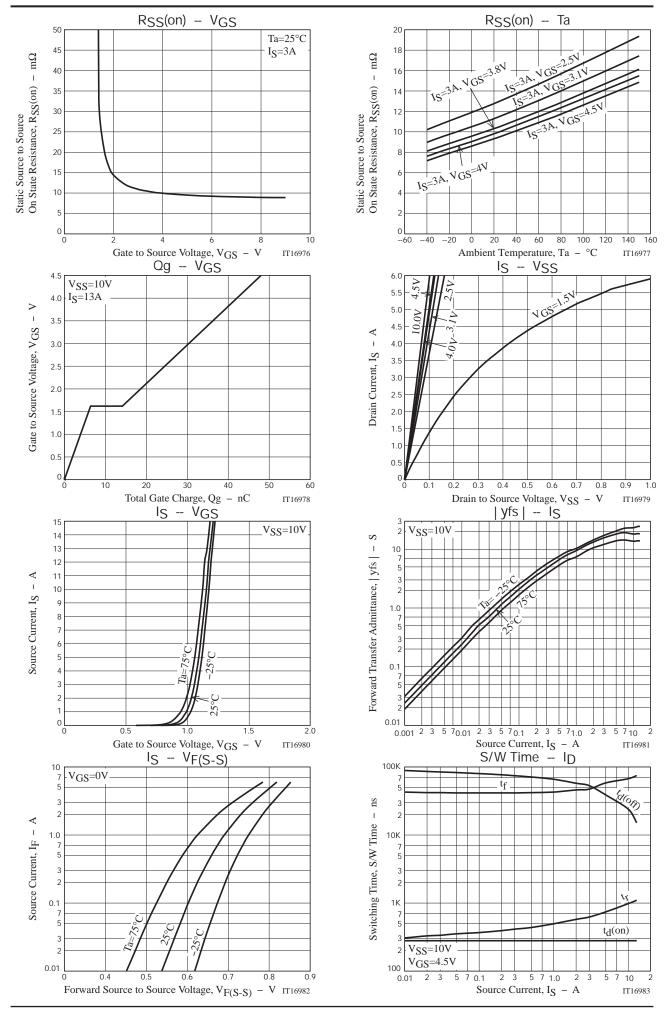
Electrical Characteristics at Ta=25°C

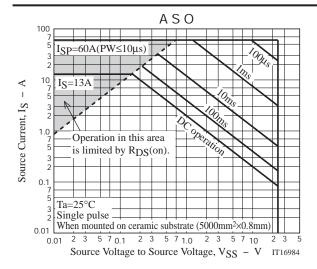
Parameter	Cumbal	Conditions		Ratings			Linit
Parameter	Symbol			min	typ	max	Unit
Source-to-Source Breakdown Voltage	V(BR)SSS	IS=1mA, VGS=0V	Test Circuit 1	24			V
Zero-Gate Voltage Source Current	ISSS	V _{SS} =20V, V _{GS} =0V	Test Circuit 1			1	μΑ
Gate-to-Source Leakage Current	IGSS	VGS=±8V, VSS=0V	Test Circuit 2			±1	μΑ
Cutoff Voltage	VGS(off)	V _{SS} =10V, I _S =1mA	Test Circuit 3	0.5		1.3	V
Forward Transfer Admittance	yfs	VSS=10V, IS=3A	Test Circuit 4		15.5		S
	R _{SS} (on)1	I _S =3A, V _{GS} =4.5V	Test Circuit 5	6.6	9.5	11.5	mΩ
Static Source-to-Source On-State Resistance	R _{SS} (on)2	I _S =3A, V _{GS} =4.0V	Test Circuit 5	7.0	10	12	mΩ
	RSS(on)3	I _S =3A, V _{GS} =3.8V	Test Circuit 5	7.3	10.5	13	mΩ
	RSS(on)4	IS=3A, VGS=3.1V	Test Circuit 5	8.0	11.5	15	mΩ
	RSS(on)5	IS=3A, VGS=2.5V	Test Circuit 5	9.0	13	17	mΩ
Turn-ON Delay Time	t _d (on)		Test Circuit 7		280		ns
Rise Time	t _r	Vpp 10V Voc 4 EV Io 24			630		ns
Turn-OFF Delay Time	t _d (off)	V _{DD} =10V, V _{GS} =4.5V, I _S =3A			53000		ns
Fall Time	tf				47000		ns
Total Gate Charge	Qg	V _{DD} =10V, V _{GS} =4.5V, I _S =13A	Test Circuit 8		48		nC
Forward Source-to-Source Voltage	V _F (S-S)	I _S =3A, V _{GS} =0V	Test Circuit 6		0.76	1.2	V

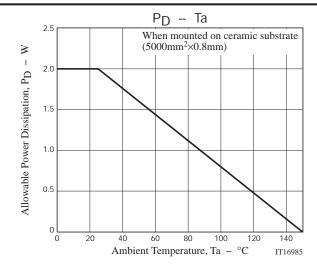
Ordering Information

Device	Package	Shipping	memo	
EFC6601R-TR	EFCP	5,000pcs./reel	Pb Free and Halogen Free	





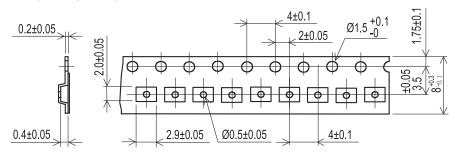




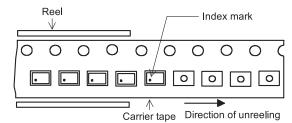
Taping Specification

EFC6601R-TR

- 1. Taping Configuration
 - 1-1 .Carrier Tape Size (unit:mm)

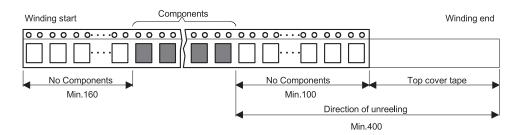


1-2 .Device Placement Direction



Packing type····TR

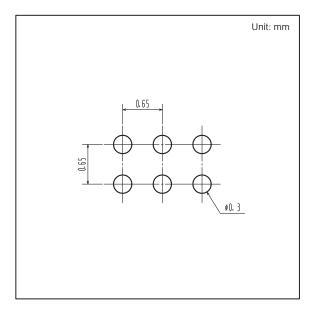
1-3 .Leader portion and Trailer portion (unit:mm)



Outline Drawing

EFC6601R-TR

Land Pattern Example



Note on usage: Since the EFC6601R is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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