



SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

EFC4618R — N-Channel Silicon MOSFET — **General-Purpose Switching Device Applications**

Features

- 2.5V drive
- Best suited for LiB charging and discharging switch
- Common-drain type

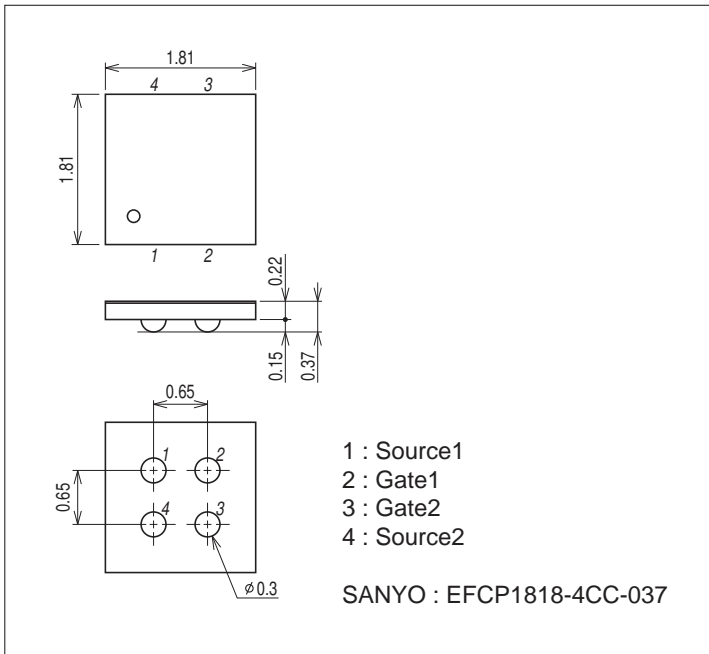
Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Source-to-Source Voltage	V _{SS}		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

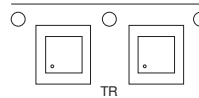
unit : mm (typ)
7069-001



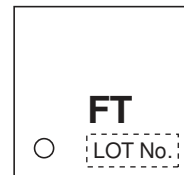
Product & Package Information

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

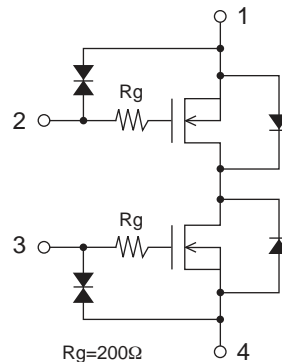
Packing Type : TR



Marking



Electrical Connection



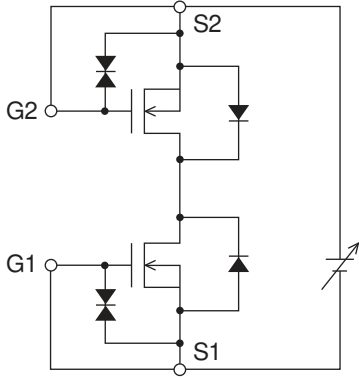
EFC4618R

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	$m\Omega$
	$R_{SS(on)2}$	$I_S=3A, V_{GS}=4.0V$ Test Circuit 5	14	20.5	24	$m\Omega$
	$R_{SS(on)3}$	$I_S=3A, V_{GS}=3.7V$ Test Circuit 5	14.5	21	25.5	$m\Omega$
	$R_{SS(on)4}$	$I_S=3A, V_{GS}=3.1V$ Test Circuit 5	14.9	23	30	$m\Omega$
	$R_{SS(on)5}$	$I_S=3A, V_{GS}=2.5V$ Test Circuit 5	18.5	27	35	$m\Omega$
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit. Test Circuit 7		200		ns
Rise Time	t_r	See specified Test Circuit. Test Circuit 7		815		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit. Test Circuit 7		1840		ns
Fall Time	t_f	See specified Test Circuit. Test Circuit 7		1770		ns
Total Gate Charge	Q_g	$V_{SS}=10V, V_{GS}=4.5V, I_S=6A$		25.4		nC
Forward Source-to-Source Voltage	$V_{F(S-S)}$	$I_S=3A, V_{GS}=0V$ Test Circuit 6		0.76	1.2	V

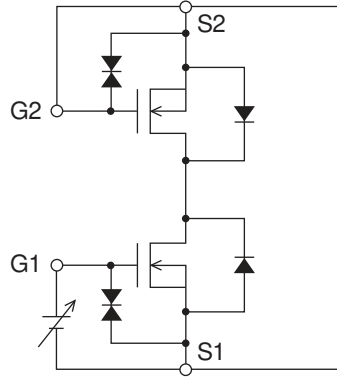
Test circuits are example of measuring FET1 side

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



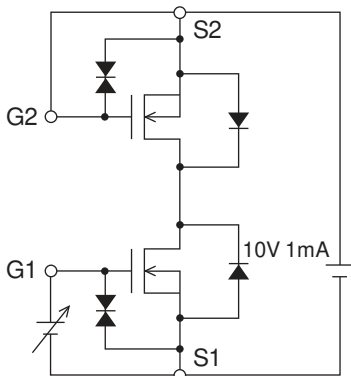
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Test Circuit 2
 $I_{GSS(+)} / (-)$



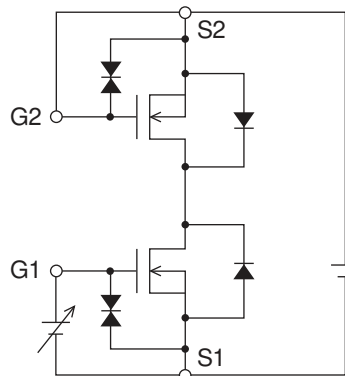
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Test Circuit 3
 $V_{GS(off)}$



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Test Circuit 4
 $|y_{fs}|$

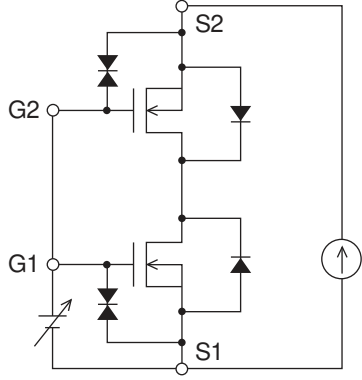


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* Note: Connect the measurement terminal reversely if you want to measure the FET2 side.

Test Circuit 5

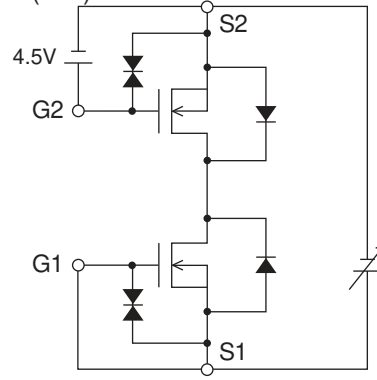
$R_{SS(on)}$



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Test Circuit 6

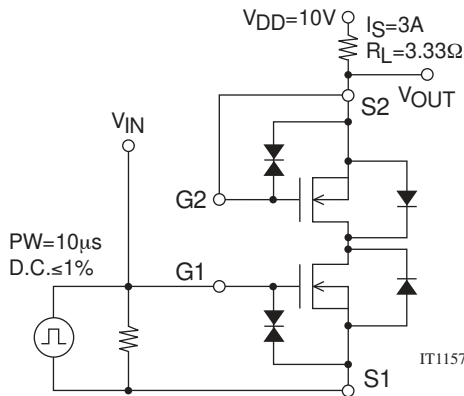
$V_F(S-S)$



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Test Circuit 7

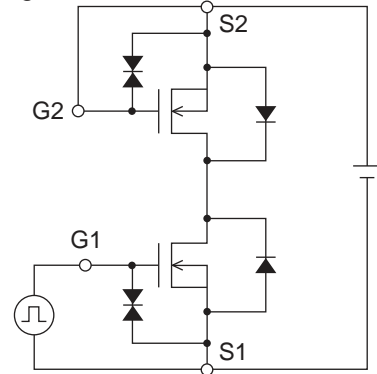
$t_d(on)$, t_r , $t_d(off)$, t_f



IT11571

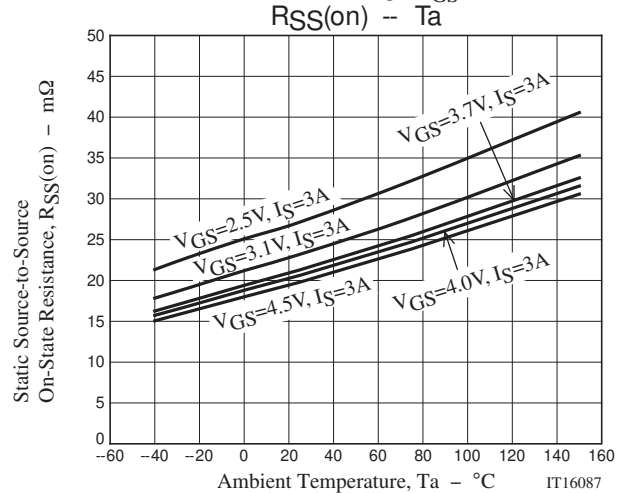
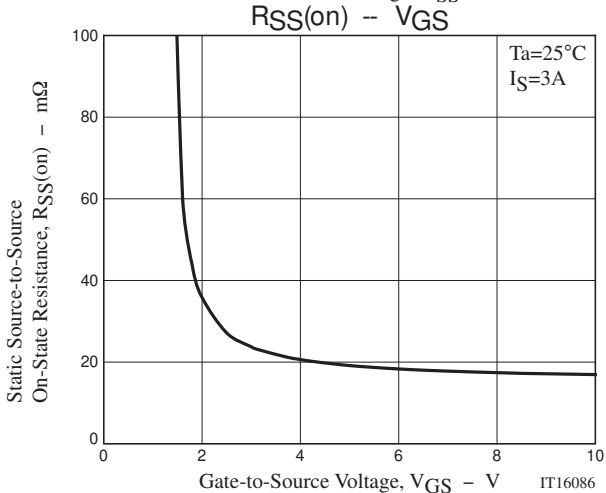
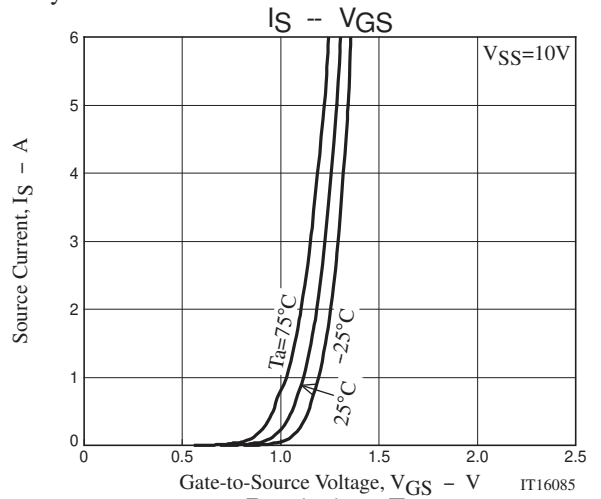
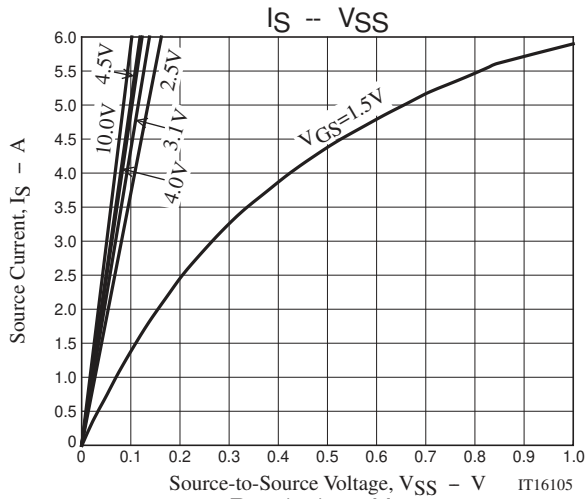
Test Circuit 8

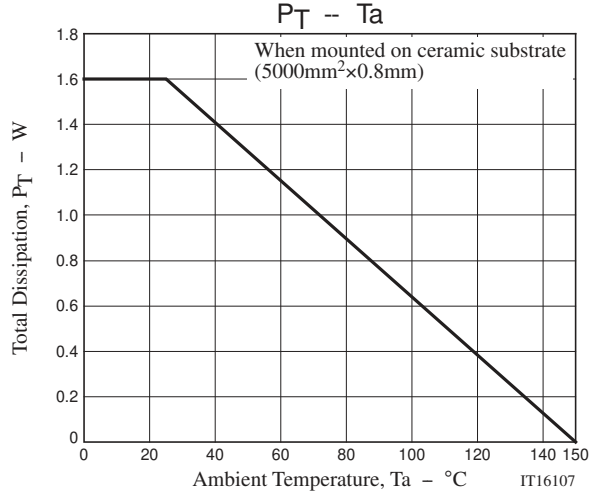
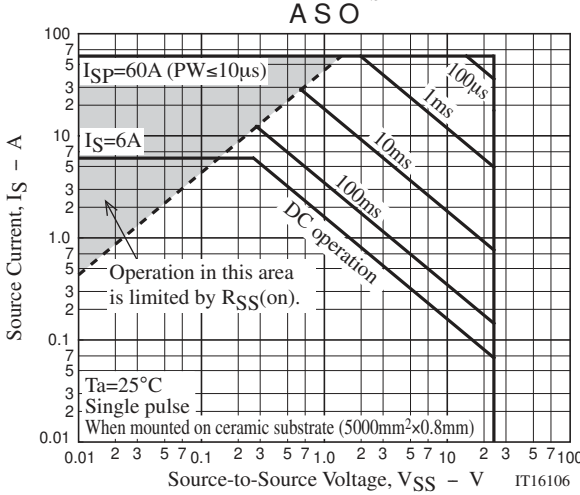
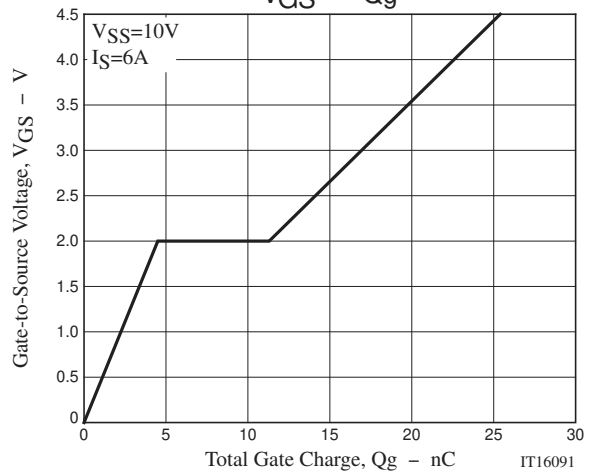
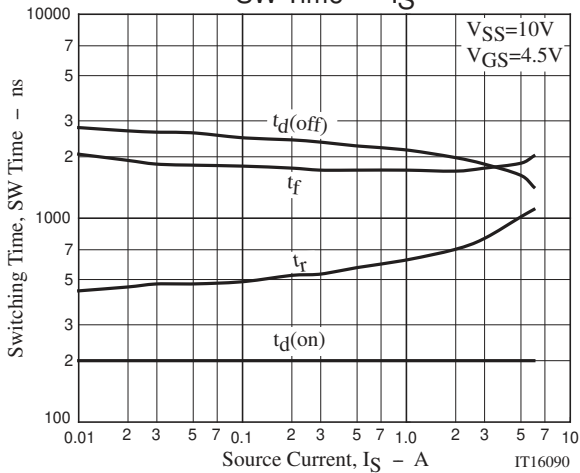
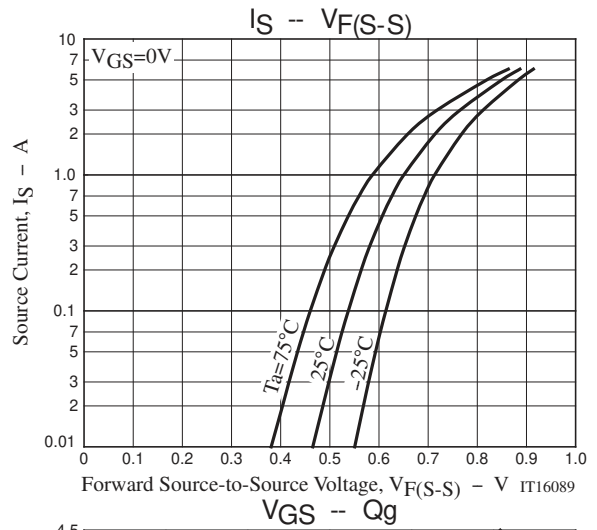
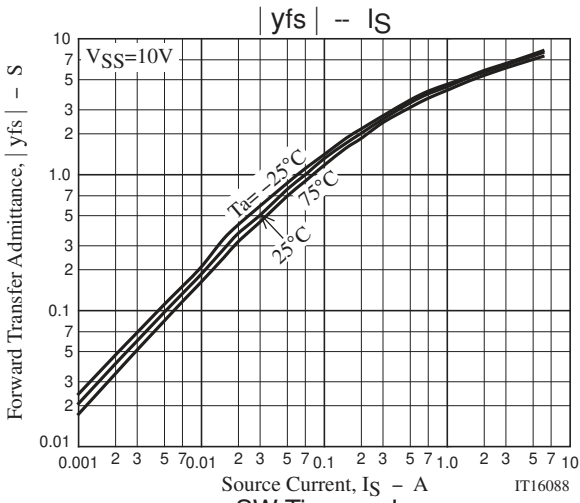
Q_g



IT15409

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





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

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