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N-Channel Silicon MOSFET

EFC4615R — General-Purpose Switching Device Applications

Features

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

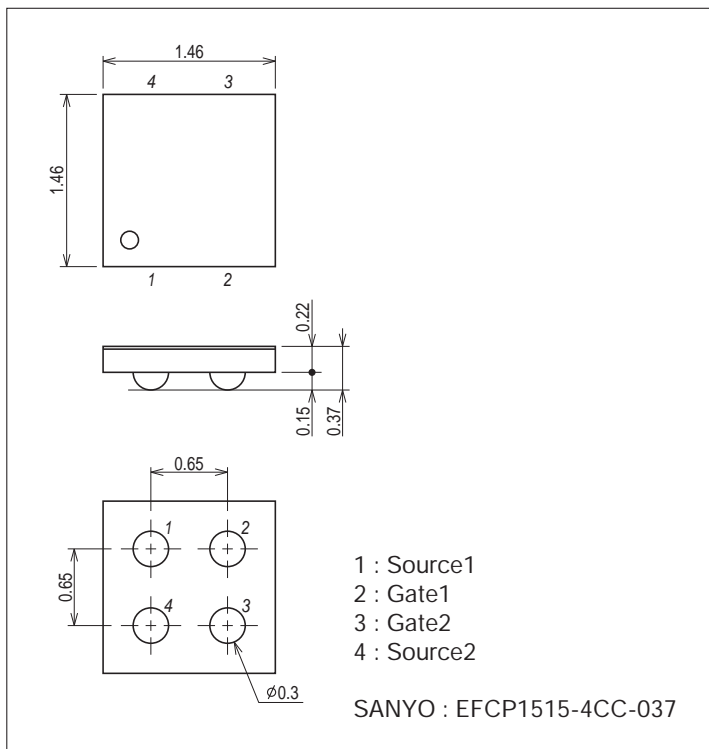
Specifications

Absolute Maximum Ratings at Ta=25°C

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

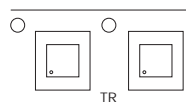
unit : mm (typ)
7067-001



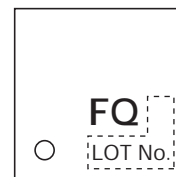
Product & Package Information

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

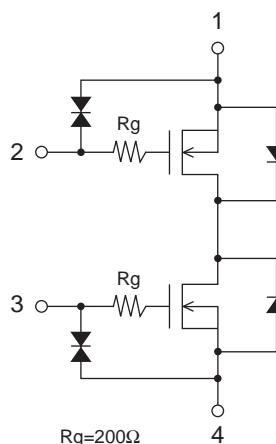
Taping Type : TR



Marking



Electrical Connection



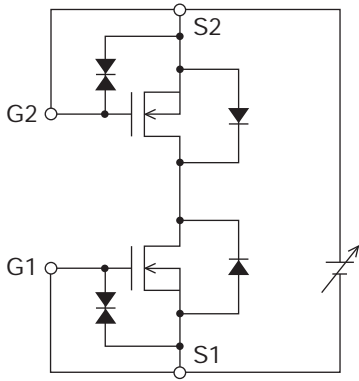
EFC4615R

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} =±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		5.4	S	
Static Source-to-Source On-State Resistance	R _{SS(on)1}	I _S =3A, V _{GS} =4.5V	Test Circuit 5	19	27	31	mΩ
	R _{SS(on)2}	I _S =3A, V _{GS} =4.0V	Test Circuit 5	21	28	33	mΩ
	R _{SS(on)3}	I _S =3A, V _{GS} =3.1V	Test Circuit 5	24	33	44	mΩ
	R _{SS(on)4}	I _S =3A, V _{GS} =2.5V	Test Circuit 5	28	39	52	mΩ
Turn-ON Delay Time	t _{d(on)}	See specified Test Circuit.	Test Circuit 7		13	ns	
Rise Time	t _r	See specified Test Circuit.	Test Circuit 7		235	ns	
Turn-OFF Delay Time	t _{d(off)}	See specified Test Circuit.	Test Circuit 7		335	ns	
Fall Time	t _f	See specified Test Circuit.	Test Circuit 7		360	ns	
Total Gate Charge	Q _g	V _{SS} =10V, V _{GS} =4.5V, I _S =6A			8.8	nC	
Forward Source-to-Source Voltage	V _{F(S-S)}	I _S =6A, V _{GS} =0V	Test Circuit 6		1	1.2	V

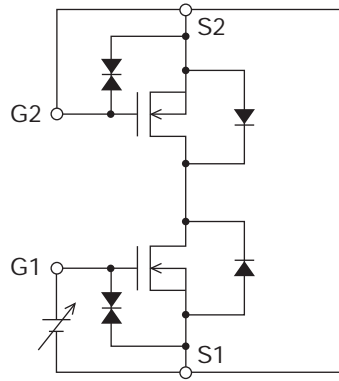
Test circuits are example of measuring FET1 side

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



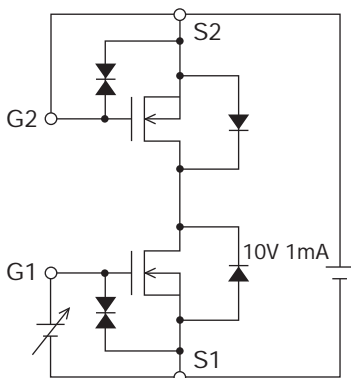
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Test Circuit 2
I_{GSS}(+) / (-)



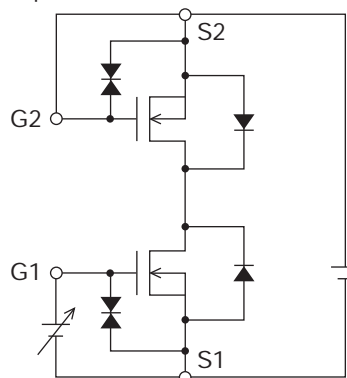
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Test Circuit 3
V_{GS(off)}



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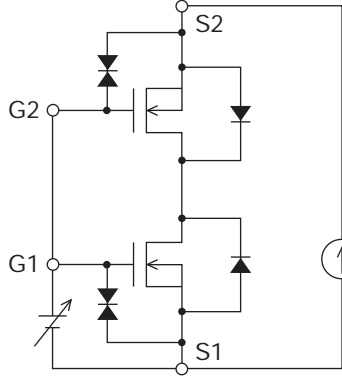
Test Circuit 4
|y_{fs}|



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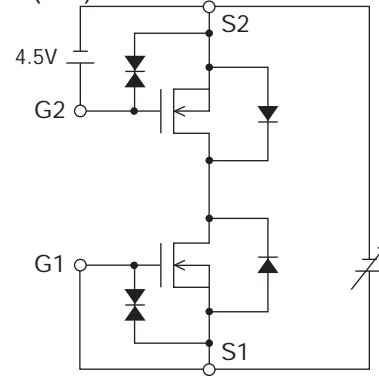
* Note: Connect the measurement terminal reversely if you want to measure the FET2 side.

Test Circuit 5
RSS(on)



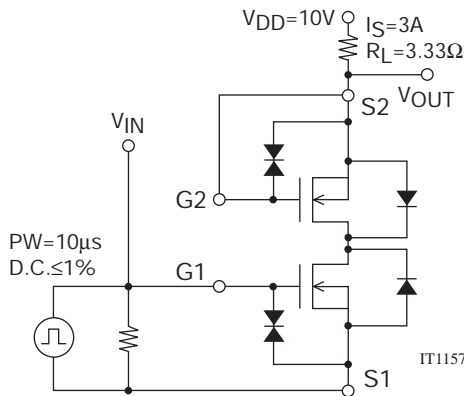
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Test Circuit 6
VF(S-S)



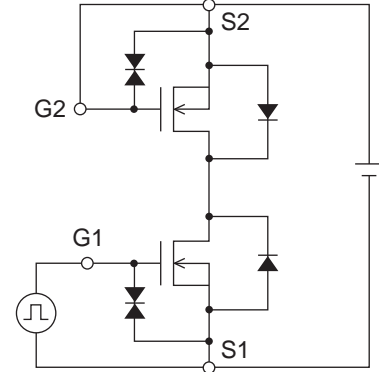
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Test Circuit 7
td(on), tr, td(off), tf



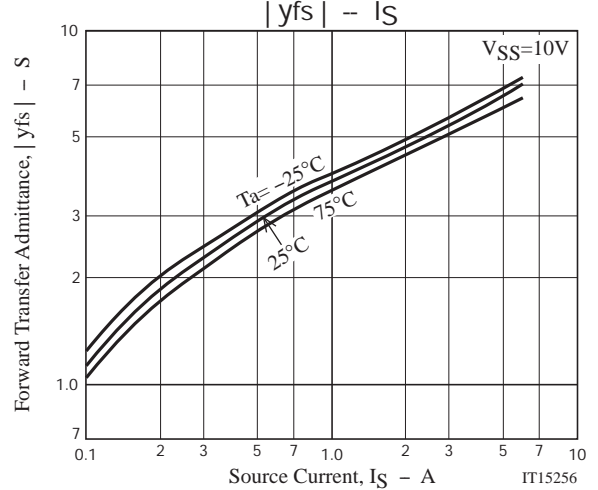
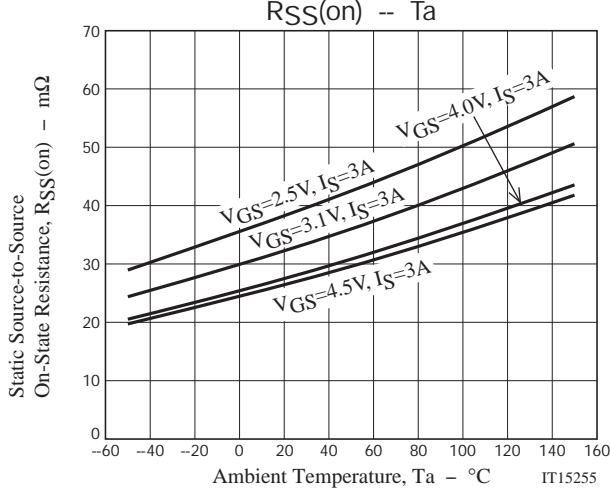
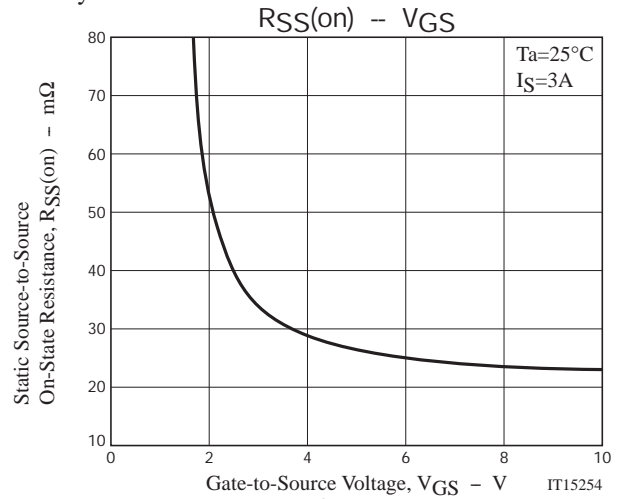
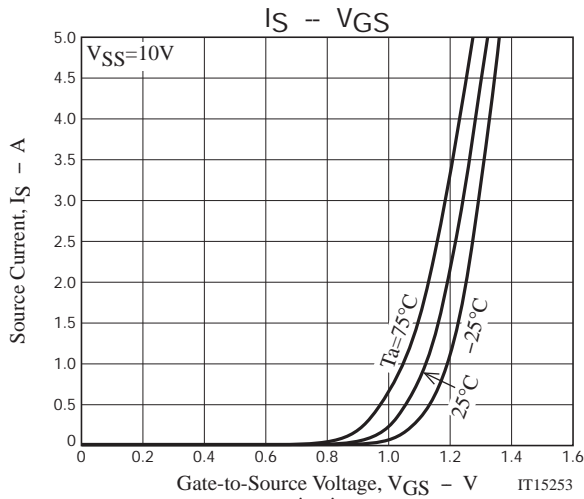
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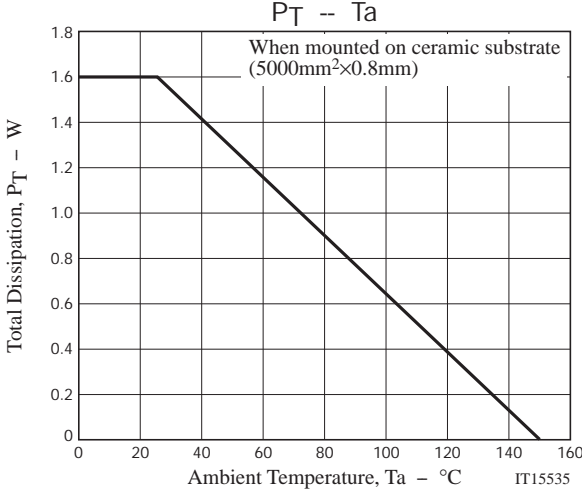
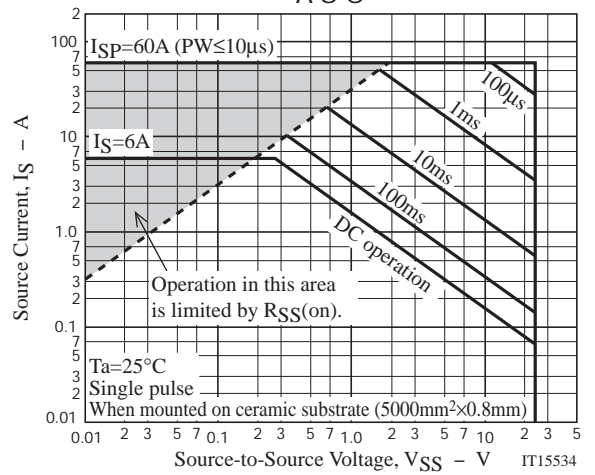
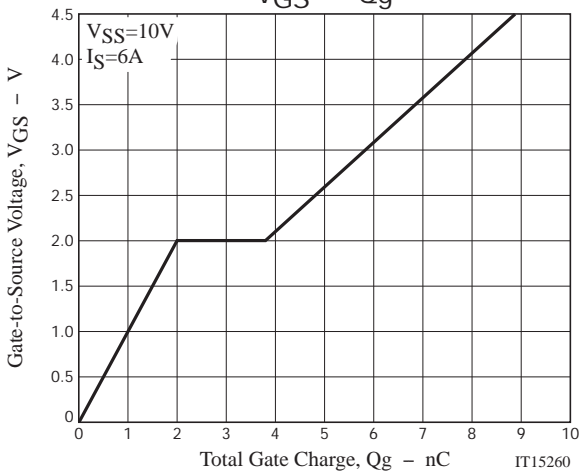
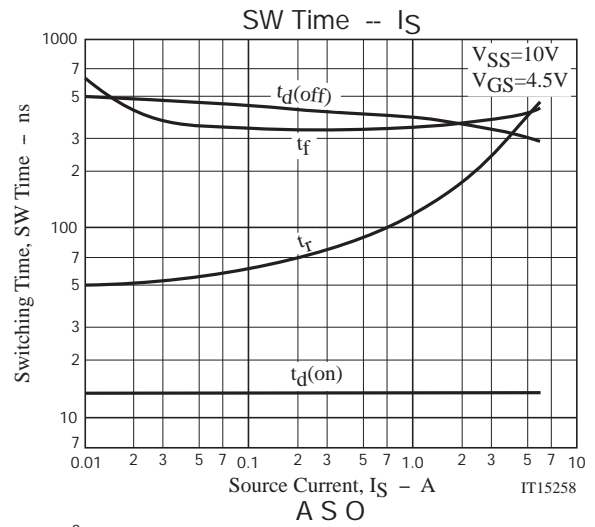
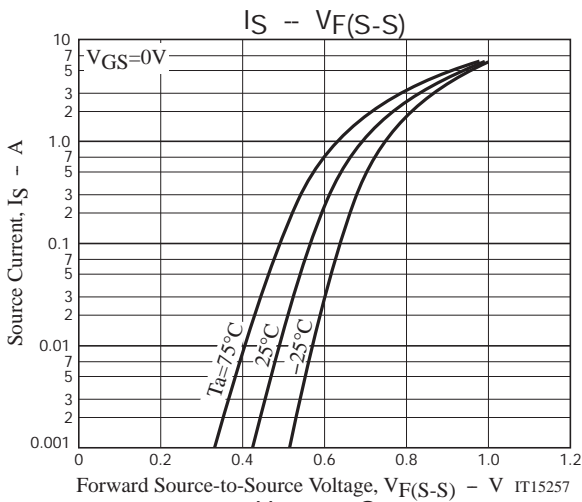
Test Circuit 8
Qg



IT15409

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





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