

# EFC6612R

Continued from preceding page.

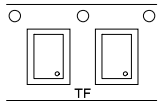
| Parameter                                   | Symbol               | Conditions   | Value   |      |     | Unit |
|---|----------------------|--|---|------|-----|------|
|   |                      |  | min   | typ  | max |      |
| Static Source to Source On-State Resistance | R <sub>SS(on)1</sub> | I <sub>S</sub> =4.5A, V <sub>GS</sub> =4.5V Test Circuit 5                       | 3.3   | 4.2  | 5.1 | mΩ   |
|   | R <sub>SS(on)2</sub> | I <sub>S</sub> =4.5A, V <sub>GS</sub> =4.0V Test Circuit 5                       | 3.4   | 4.3  | 5.2 | mΩ   |
|   | R <sub>SS(on)3</sub> | I <sub>S</sub> =4.5A, V <sub>GS</sub> =3.8V Test Circuit 5                       | 3.5   | 4.4  | 5.3 | mΩ   |
|   | R <sub>SS(on)4</sub> | I <sub>S</sub> =4.5A, V <sub>GS</sub> =3.1V Test Circuit 5                       | 3.9   | 4.9  | 6.4 | mΩ   |
|   | R <sub>SS(on)5</sub> | I <sub>S</sub> =4.5A, V <sub>GS</sub> =2.5V Test Circuit 5                       | 4.4   | 5.6  | 7.9 | mΩ   |
| Turn-ON Delay Time                          | t <sub>d(on)</sub>   | V <sub>SS</sub> =10V, V <sub>GS</sub> =4.5V, I <sub>S</sub> =4.5A Test Circuit 6 |   | 30   |     | ns   |
| Rise Time                                   | t <sub>r</sub>       |  |   | 640  |     | ns   |
| Turn-OFF Delay Time                         | t <sub>d(off)</sub>  |  |   | 11.8 |     | μs   |
| Fall Time                                   | t <sub>f</sub>       |  |   | 92   |     | μs   |
| Total Gate Charge                           | Q <sub>g</sub>       |  | V <sub>SS</sub> =10V, V <sub>GS</sub> =4.5V, I <sub>S</sub> =23A Test Circuit 7 |      | 27  |      |
| Forward Source to Source Voltage            | V <sub>F(S-S)</sub>  | I <sub>S</sub> =4.5A, V <sub>GS</sub> =0V Test Circuit 8                         |   | 0.76 | 1.2 | V    |

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

## Ordering & Package Information

| Device      | Package | Shipping          | note                     |
|-------------|---------|-------------------|--------------------------|
| EFC6612R-TF | EFCP    | 5,000 pcs. / reel | Pb-Free and Halogen Free |

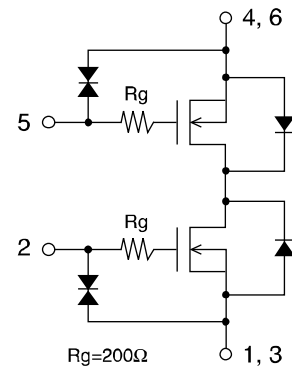
## Packing Type: TF



## Marking

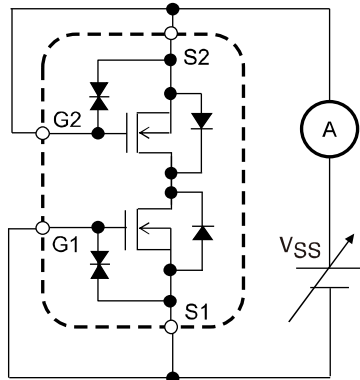


## Electrical Connection

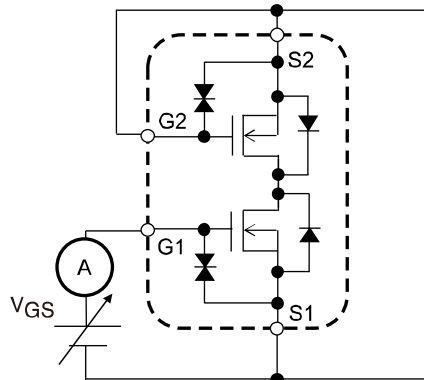


Test circuits are example of measuring FET1 side

Test Circuit 1  
I<sub>SSS</sub>

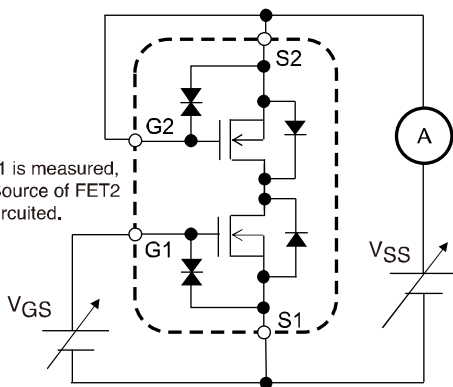


Test Circuit 2  
I<sub>GSS</sub>



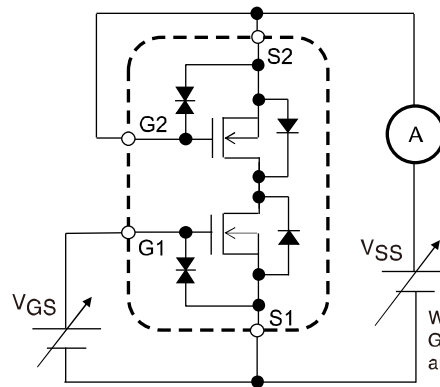
When FET1 is measured, Gate and Source of FET2 are short-circuited.

Test Circuit 3  
V<sub>GS(th)</sub>



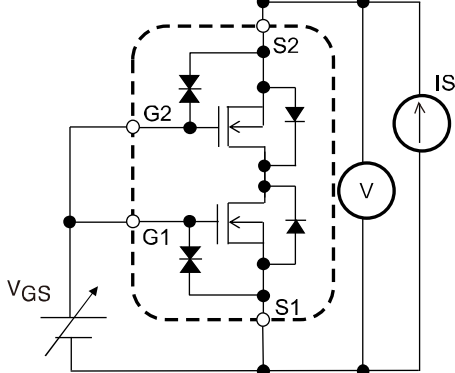
When FET1 is measured, Gate and Source of FET2 are short-circuited.

Test Circuit 4  
g<sub>FS</sub>

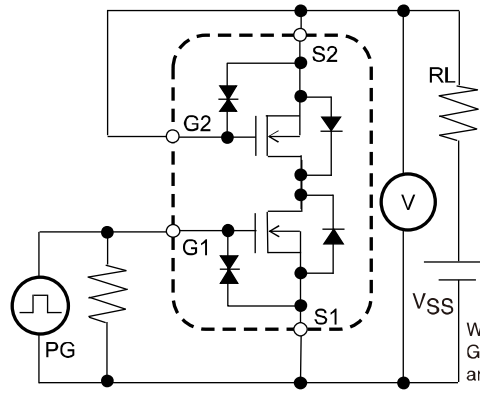


When FET1 is measured, Gate and Source of FET2 are short-circuited.

Test Circuit 5  
R<sub>SS(on)</sub>

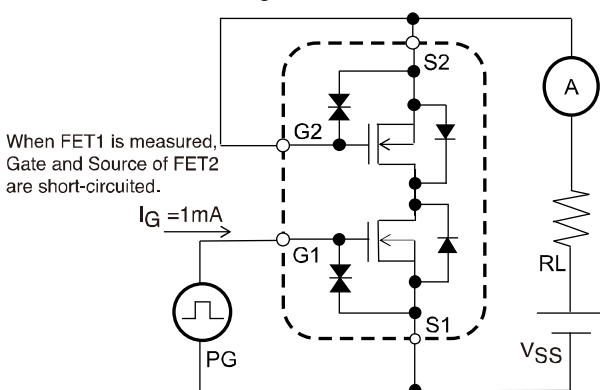


Test Circuit 6  
t<sub>d(on)</sub>, t<sub>r</sub>, t<sub>d(off)</sub>, t<sub>f</sub>



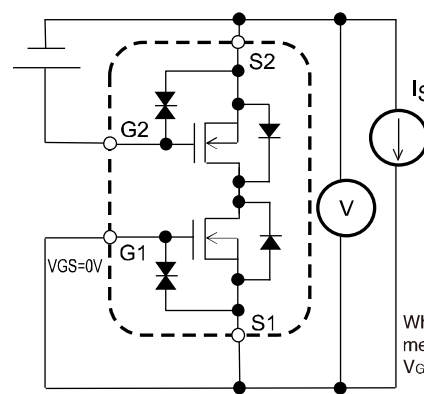
When FET1 is measured, Gate and Source of FET2 are short-circuited.

Test Circuit 7  
Q<sub>g</sub>



When FET1 is measured, Gate and Source of FET2 are short-circuited.

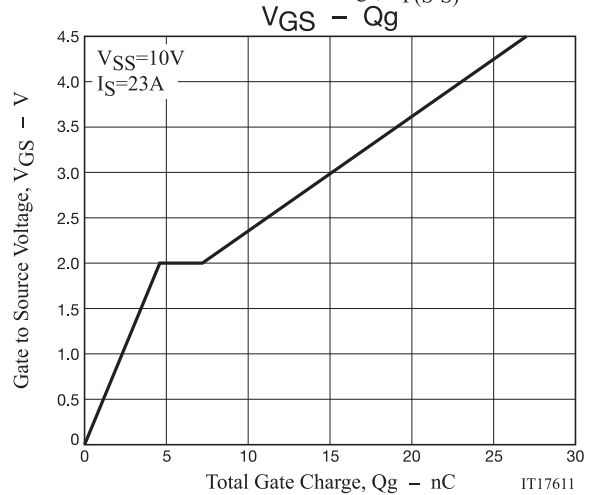
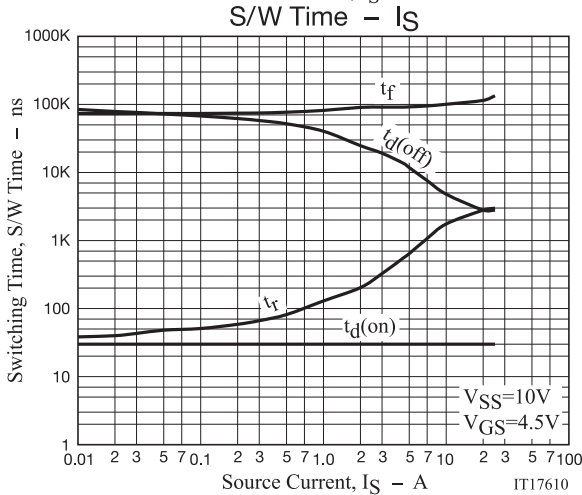
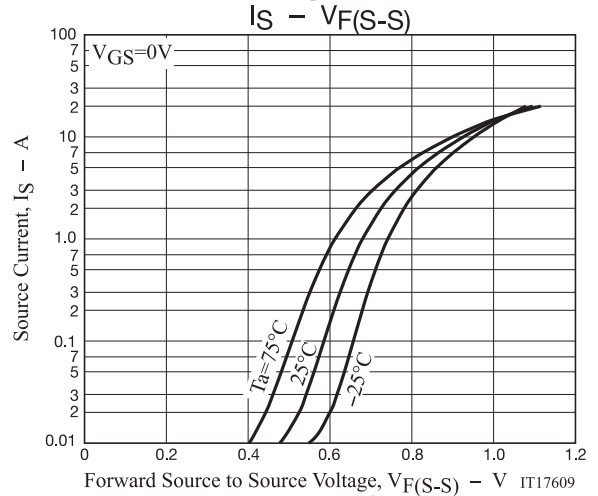
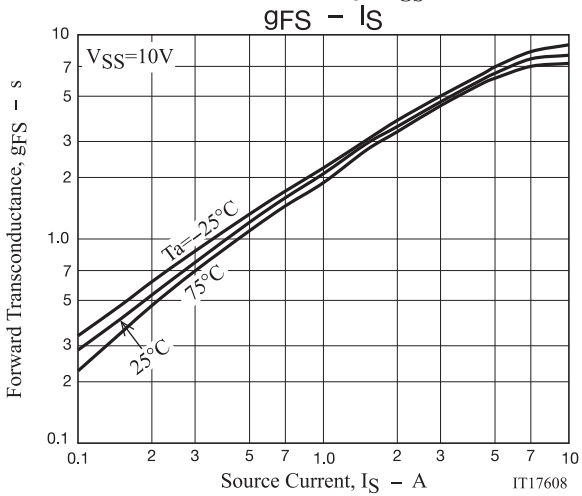
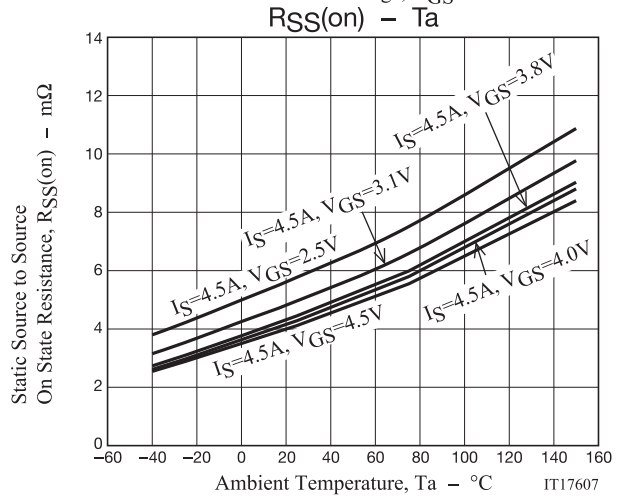
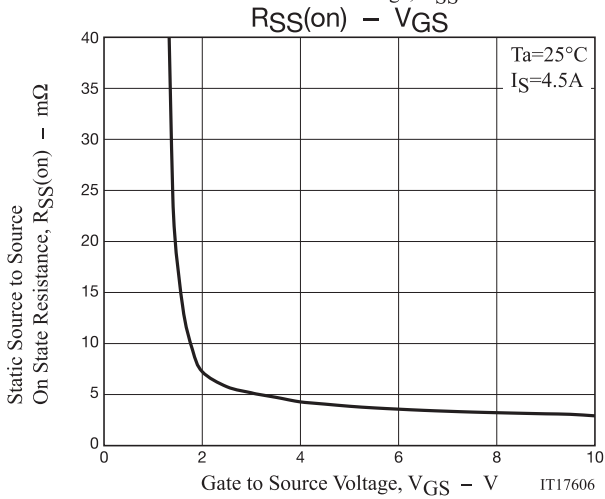
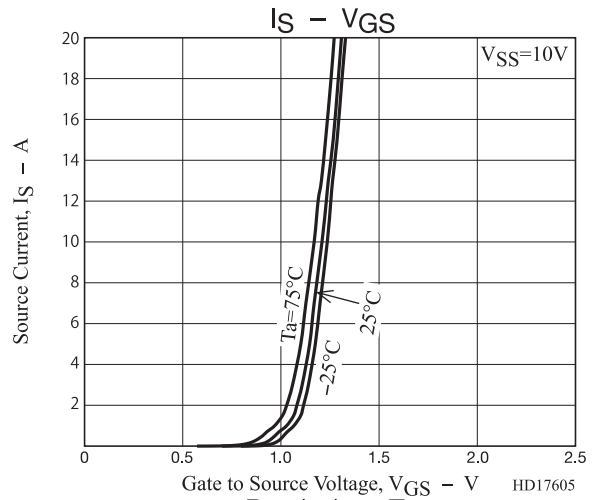
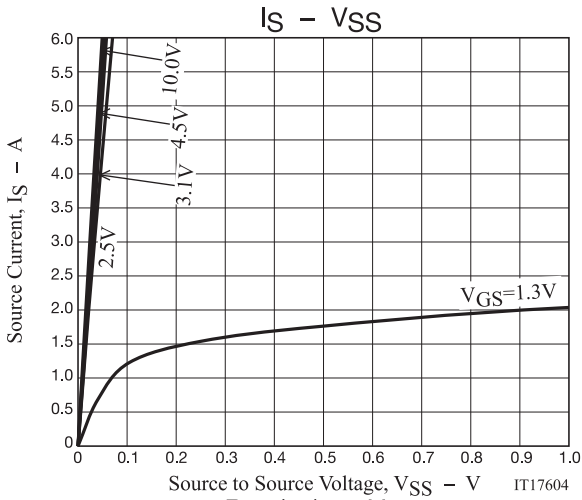
Test Circuit 8  
V<sub>F(S-S)</sub>



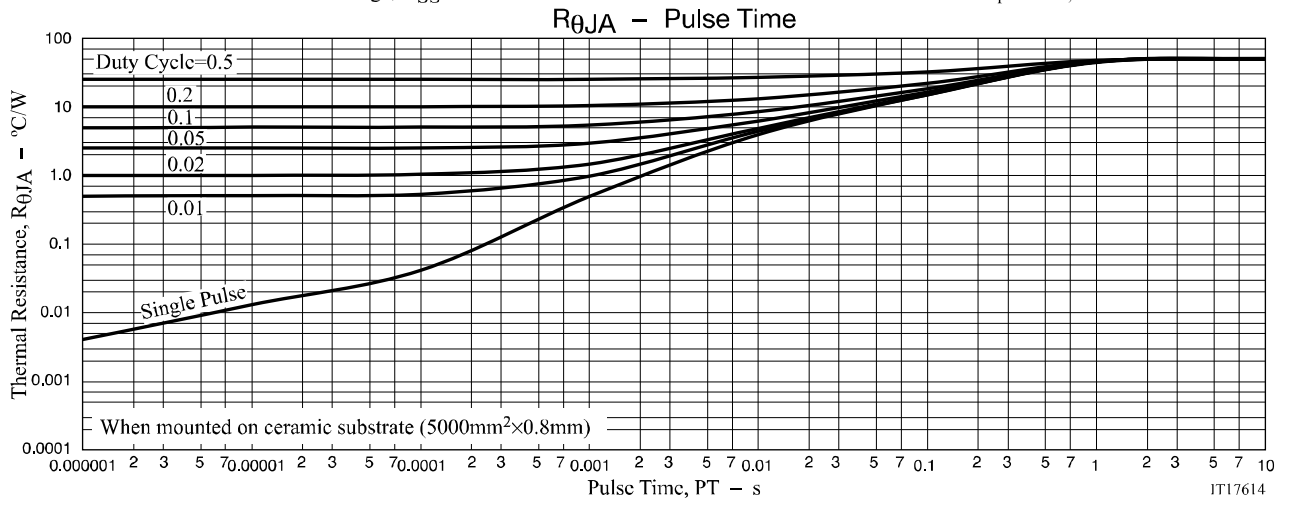
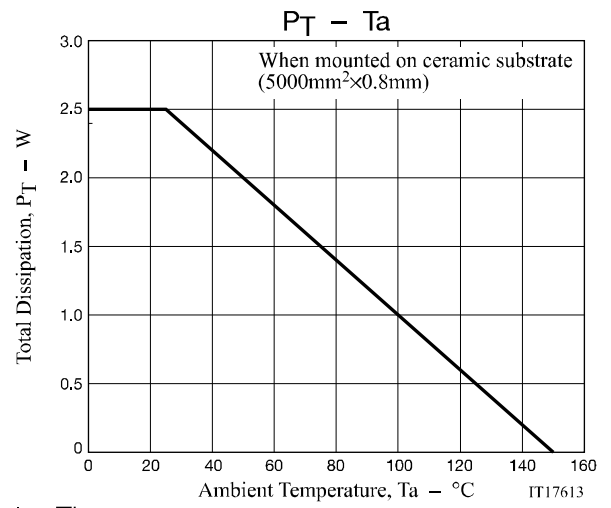
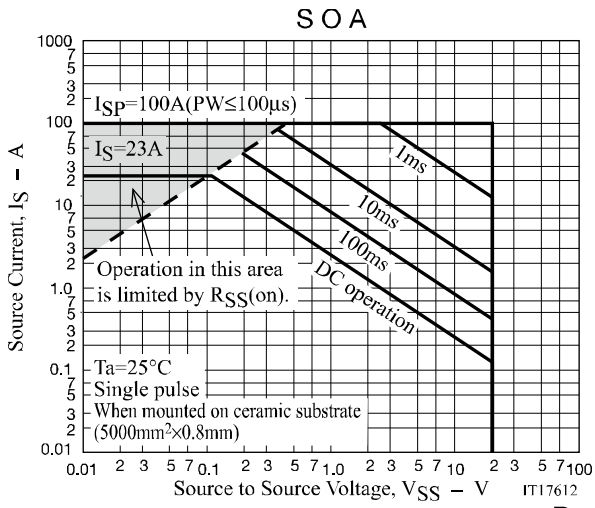
When FET1 is measured, +4.5V is added to V<sub>GS</sub> of FET2.

When FET2 is measured, the position of FET1 and FET2 is switched.

# EFC6612R



# EFC6612R



Package Dimensions

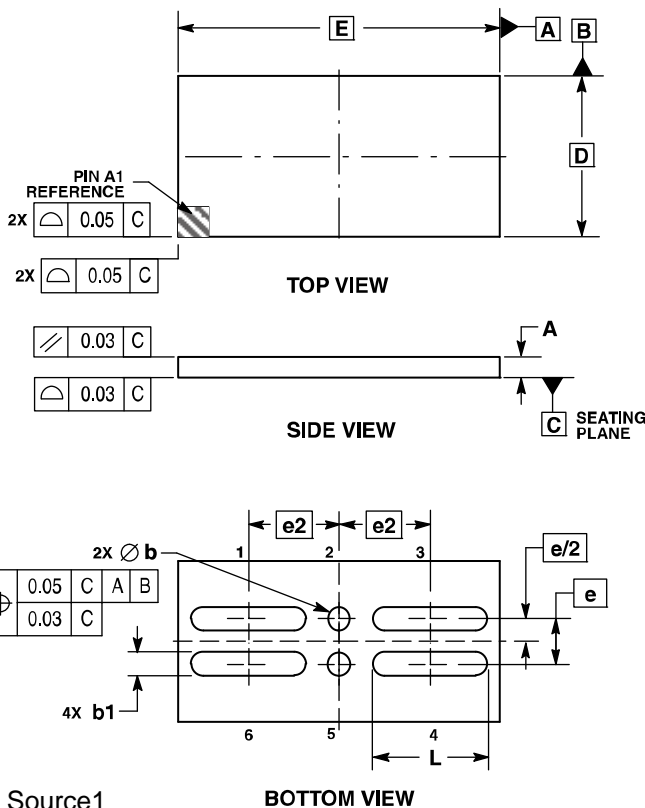
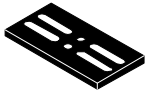
EFC6612R-TF

CSP6, 1.77×3.54 / EFCP3517-6DGH-020

CASE 568AL

ISSUE O

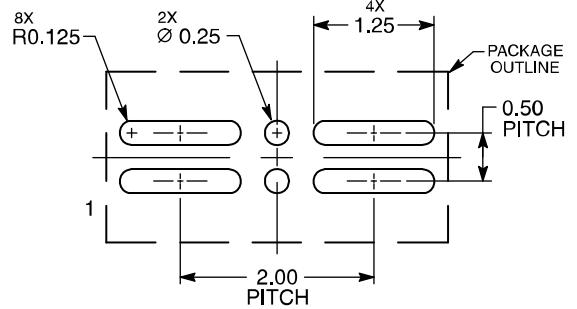
unit : mm



NOTES:  
 1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.  
 2. CONTROLLING DIMENSION: MILLIMETERS.

| DIM | MILLIMETERS |      |
|-----|-------------|------|
|     | MIN         | MAX  |
| A   | —           | 0.22 |
| b   | 0.22        | 0.28 |
| b1  | 0.22        | 0.28 |
| D   | 1.77 BSC    |      |
| E   | 3.54 BSC    |      |
| e   | 0.50 BSC    |      |
| e2  | 1.00 BSC    |      |
| L   | 1.22        | 1.28 |

RECOMMENDED SOLDERING FOOTPRINT\*



DIMENSIONS: MILLIMETERS

\*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

- 1: Source1
- 2: Gate1
- 3: Source1
- 4: Source2
- 5: Gate2
- 6: Source2

Note on usage : Since the EFC6612R is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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