

Product Summary

V _{SS}	R _{SS(on)TYP}	I _S
20V	13.6mΩ@4.5V	8A
	14.0mΩ@4.0V	
	14.2mΩ@3.8V	
	15.3mΩ@3.1V	
	17.0mΩ@2.5V	

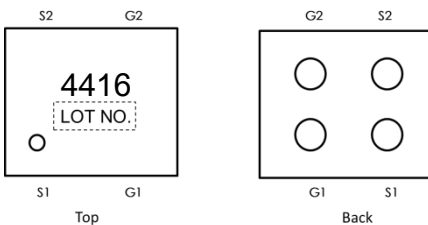
Feature

- Trench Technology
- Common-drain design
- Supper high density cell design
- ESD Diode-Protected Gate
- CSP

Application

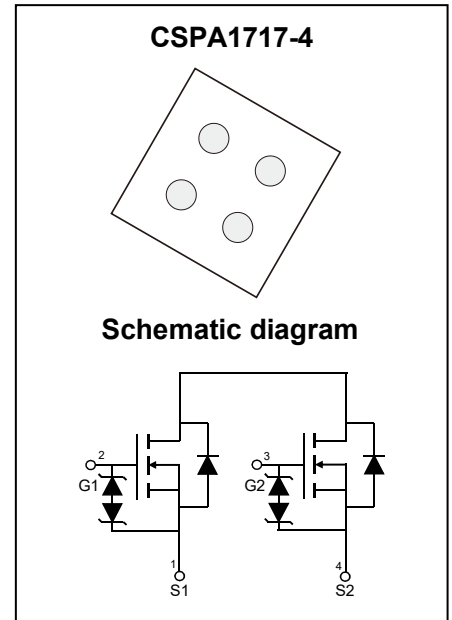
- unidirectional or bidirectional load switch

MARKING:



ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Source - Source Voltage	V _{DS}	20	V
Gate - Source Voltage	V _{GS}	±12	V
Source Current	DC ¹	I _S	8
	Pulse ^{1,2}	I _{SP}	60
Total Power Dissipation ¹	T _A = 25°C	P _T	1.5
Junction Temperature	T _J	150	°C
Storage Temperature	T _{STG}	-55~ +150	°C

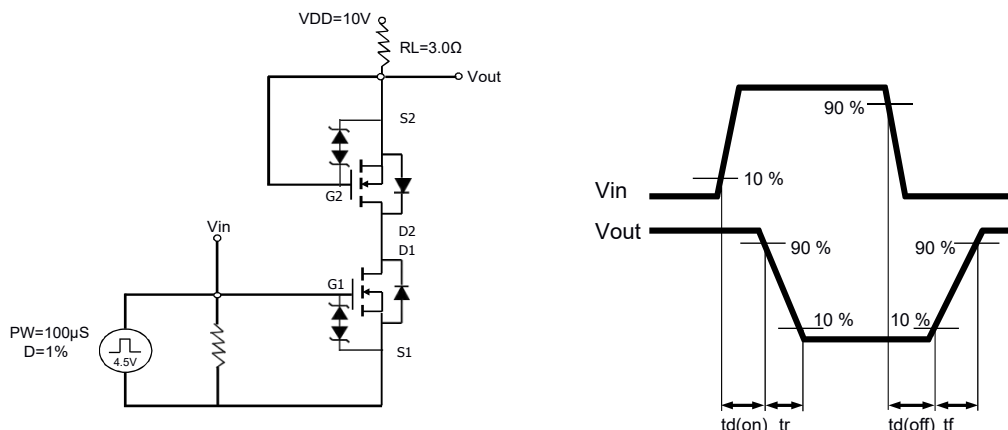


MOSFET ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

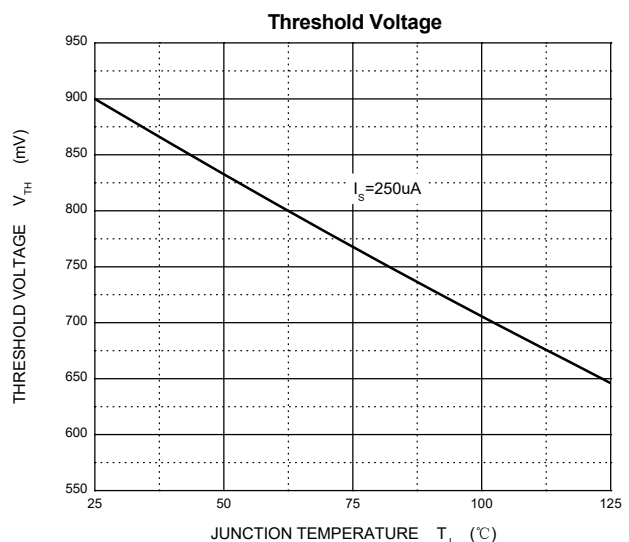
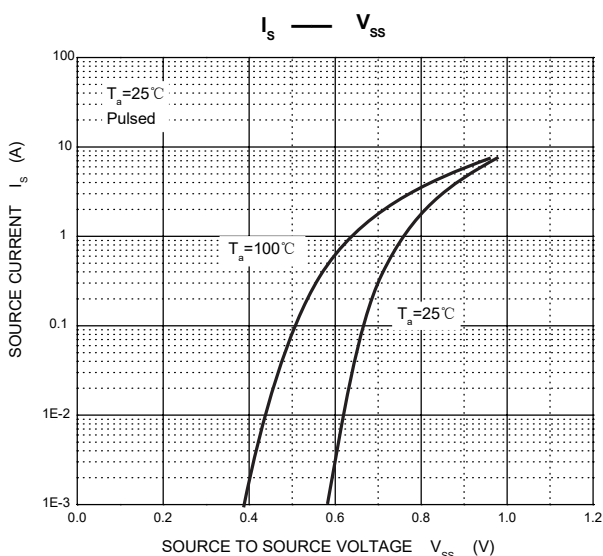
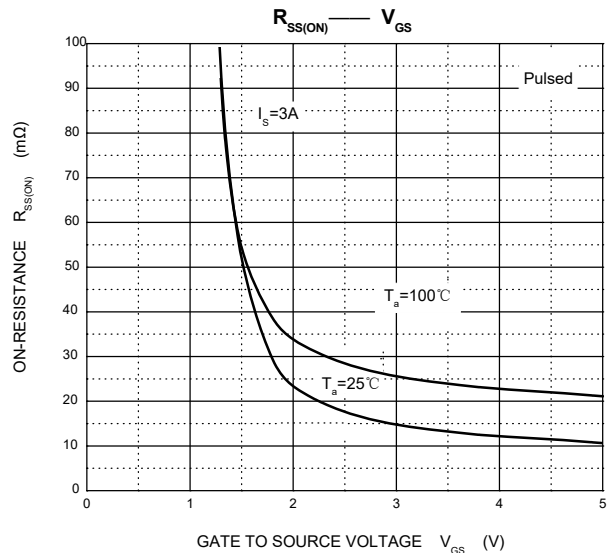
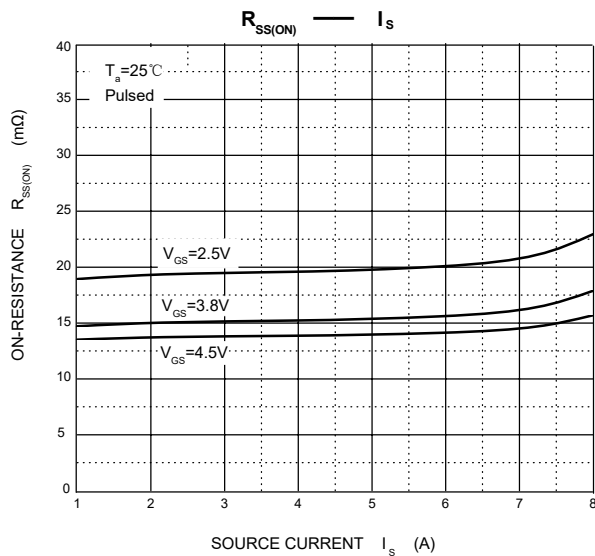
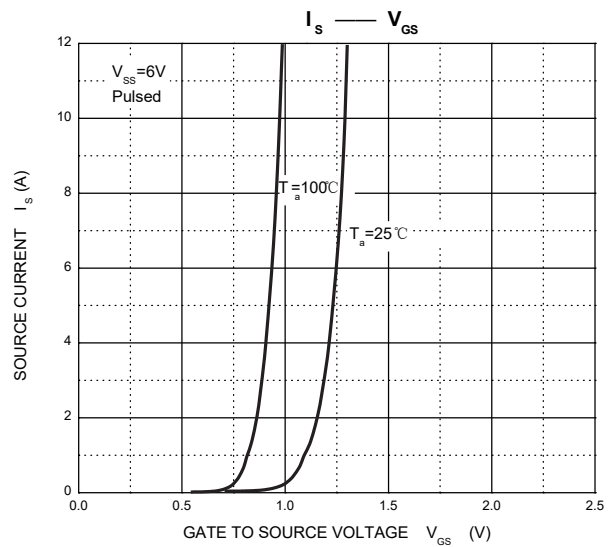
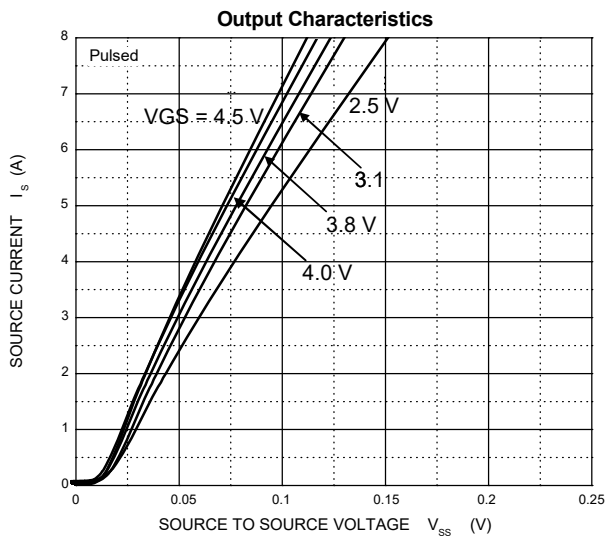
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Off Characteristics						
Drain - Source Breakdown Voltage	BV _{SSS}	V _{GS} = 0V, I _S = 250μA	20			V
Zero Gate Voltage Drain Current	I _{SSS}	V _{SS} = 20V, V _{GS} = 0V			1	μA
Gate - Body Leakage Current	I _{GSS}	V _{GS} = ±8V, V _{SS} = 0V			±3	μA
On Characteristics						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _S = 250μA	0.5	0.7	1.3	V
Drain-source On-resistance	R _{SS(on)}	V _{GS} = 4.5V, I _S = 1A	9.5	13.6	17.0	mΩ
		V _{GS} = 4.0V, I _S = 1A	10.0	14.0	17.5	
		V _{GS} = 3.8V, I _S = 1A	10.5	14.2	18.0	
		V _{GS} = 3.1V, I _S = 1A	11.0	15.3	19.5	
		V _{GS} = 2.5V, I _S = 1A	12.0	17.0	23.0	
Dynamic Characteristics						
Input Capacitance	C _{iSS}	V _{SS} = 10V, V _{GS} = 0V, f = 1MHz		1496		pF
Output Capacitance	C _{oSS}			193		
Reverse Transfer Capacitance	C _{rSS}			152		
Gate Resistance	R _g	V _{SS} = 0V, V _{GS} = 0V, f = 1MHz		217		Ω
Switching Characteristics³						
Total Gate Charge	Q _g	V _{SS} = 10V, V _{GS} = 4.5V, I _S = 5A		27		nC
Gate-source Charge	Q _{g1s1}			3.3		
Gate-drain Charge	Q _{g1s2}			5.6		
Turn-on Delay Time	t _{d(on)}	V _{DD} = 10V, V _{GS} = 4.5V, R _L = 3Ω		0.4		μs
Turn-on Rise Time	t _r			0.6		
Turn-off Delay Time	t _{d(off)}			2.5		
Turn-off Fall Time	t _f			1.0		
Source - Drain Diode Characteristics						
Diode Forward Voltage ³	V _{F(S-S)}	V _{GS} = 0V, I _S = 1A			1.0	V

Notes :

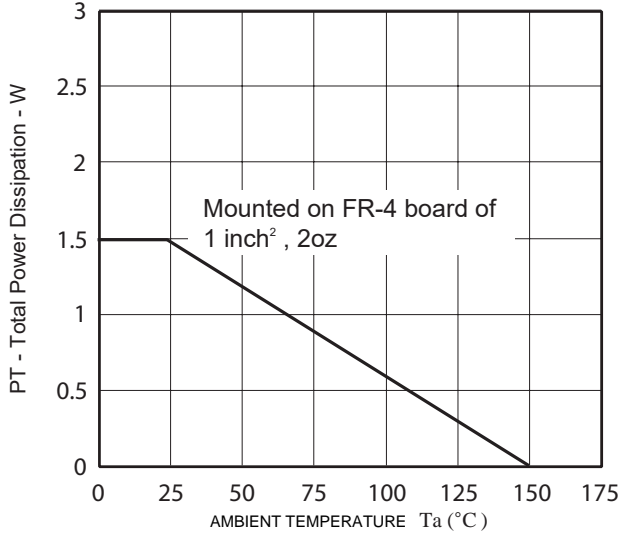
1. Mounted on FR4 board (25.4mmX25.4mmXt1.0mm) using the minimum recommended pad size (36um Copper).
2. t = 10ms, Duty Cycle = 1%.
3. When FET1 is measured, G2 and S2 are short-circuited.



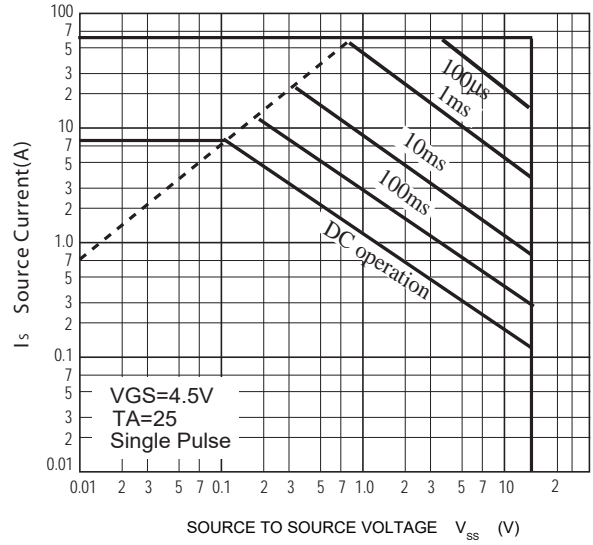
Typical Characteristics



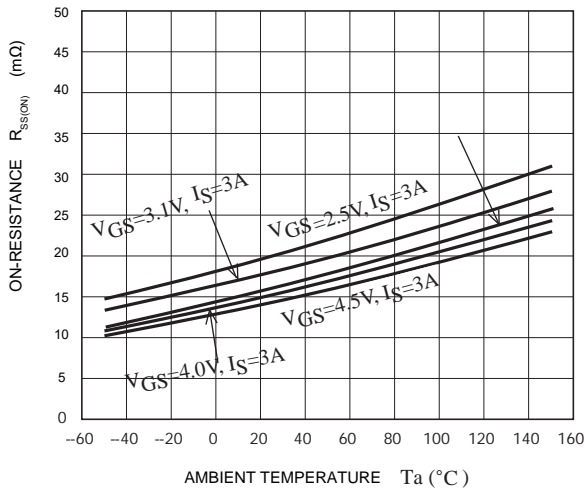
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



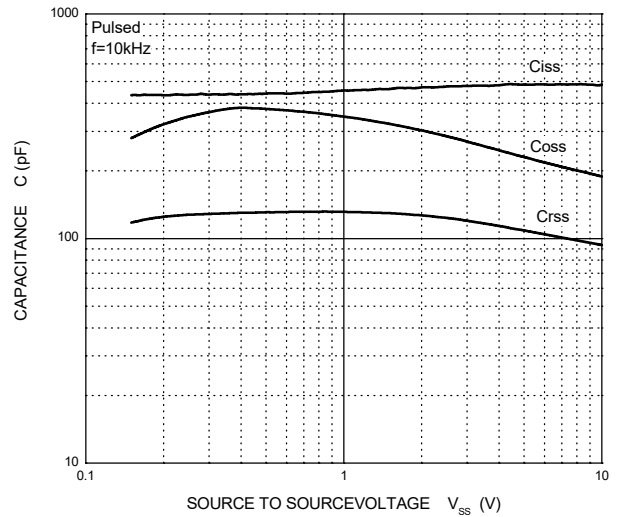
Maximum Safe Operating Area



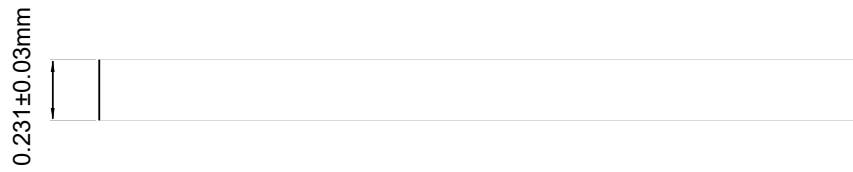
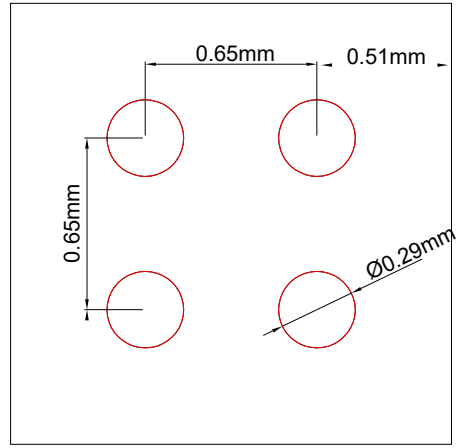
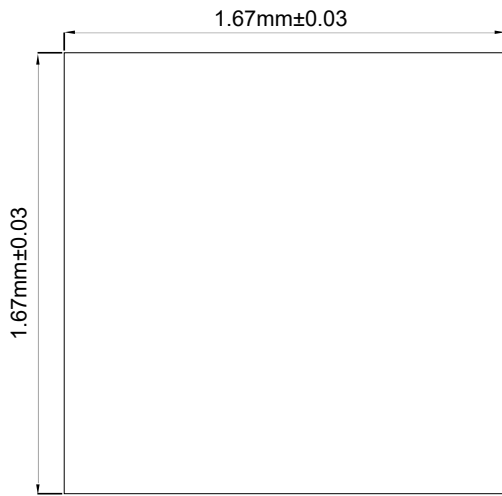
$R_{ss(ON)}$ — T_a



Capacitances



CSPA1717-4 Package Information



Attention:

- GreenPower Electronics reserves the right to improve product design function and reliability without notice.
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