



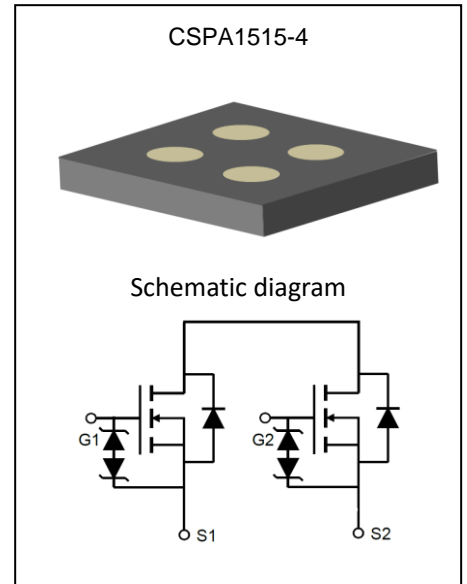
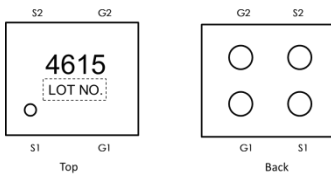
#### Product Summary

$V_{(BRSS)}$	$R_{DS(on)TYP}$	$I_s$
20V	20.5mΩ@4.5V	7A
	21.5mΩ@4.0V	
	22mΩ@3.8V	
	23mΩ@3.1V	
	26mΩ@2.5V	

#### Description

The GP4615SP uses advanced trench technology to provide excellent  $R_{SS(ON)}$ , low gate charge and operation with gate voltages as low as 2.5V while retaining a 12V  $V_{GS(MAX)}$  rating. It is ESD protected. This device is suitable for use as a unidirectional or bi-directional load switch, facilitated by its common-drain configuration.

#### Marking and pin assignment:



#### ABSOLUTE MAXIMUM RATINGS ( $T_a=25^{\circ}C$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Source to Source Voltage	$V_{SSS}$	20	V
Gate-Source Voltage	$V_{GSS}$	$\pm 12$	V
Source Current(DC) <sup>1</sup>	$I_s$	7.0	A
Source Current (Pulse) <sup>1,2</sup>	$I_{SP}$	60	A
Total Dissipation	$P_T$	1.5	W
Channel Temperature	$T_{ch}$	150	$^{\circ}C$
Storage Temperature	$T_{STG}$	-55 to +150	$^{\circ}C$

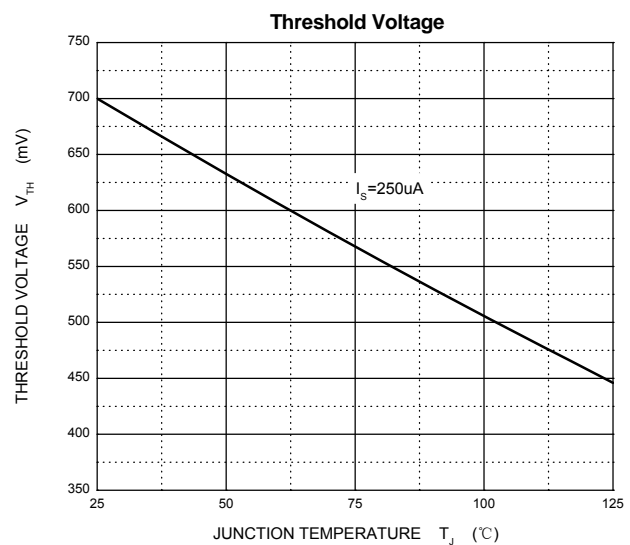
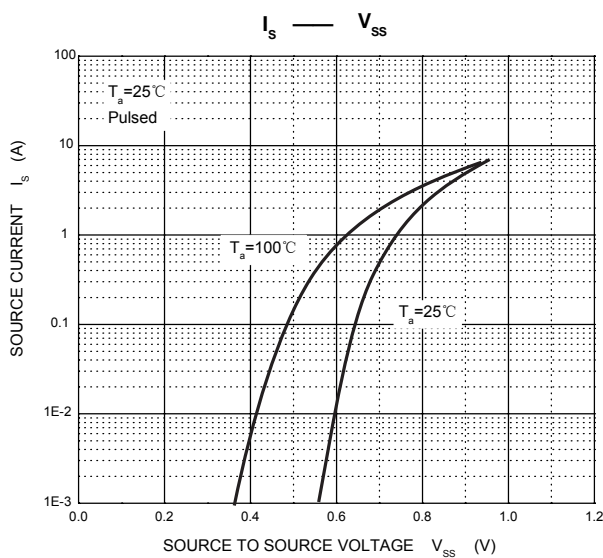
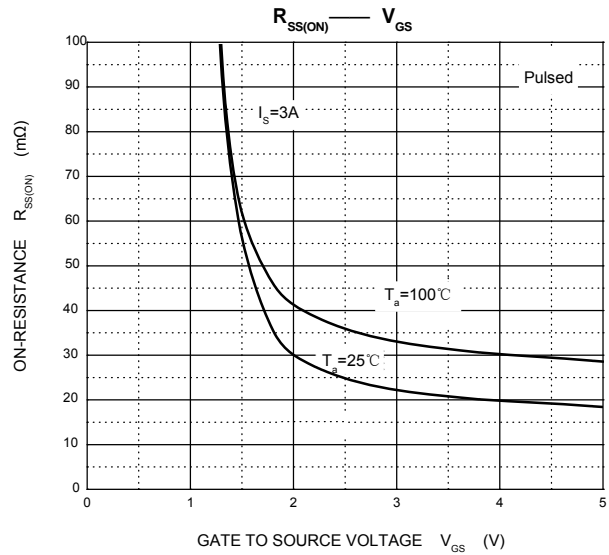
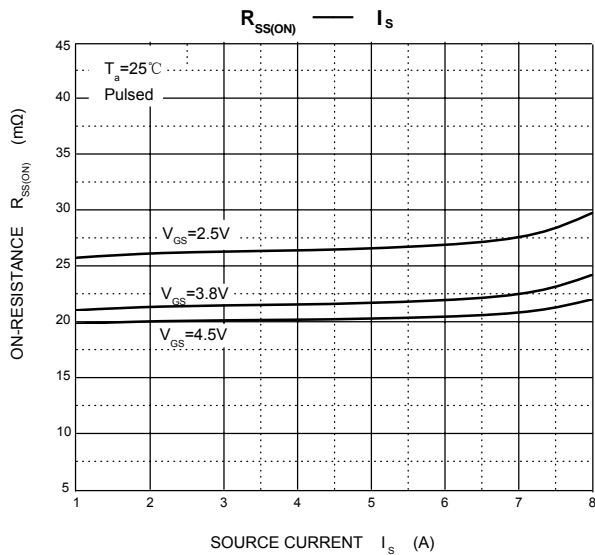
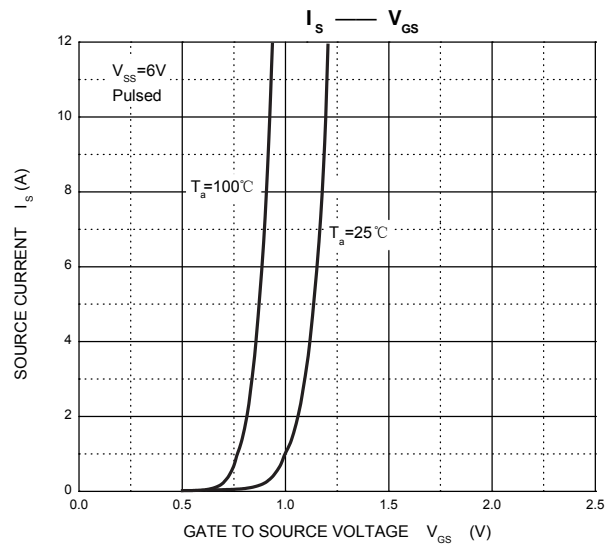
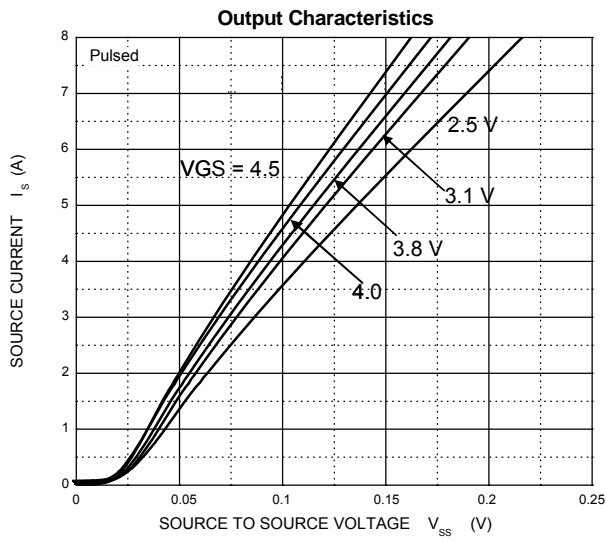
Note:

- 1、 Mounted on FR4 board (25.4mm×25.4mm×1.0mm ) using the minimum recommended pad size (36μm Copper).
- 2、  $t = 10\mu s$ , Duty Cycle≤1%

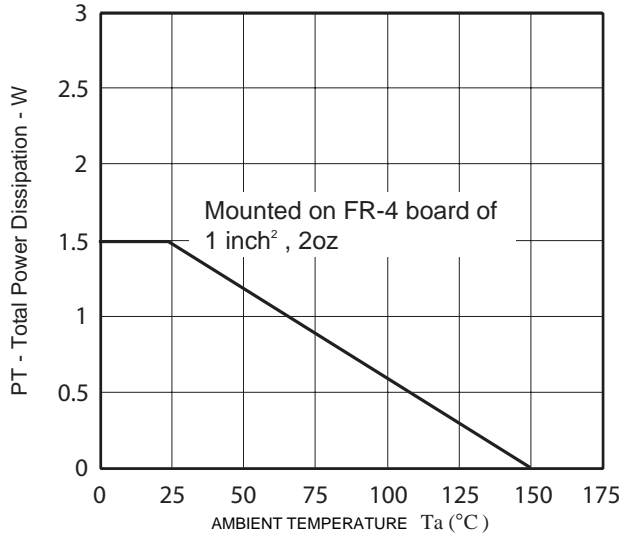
**MOSFET ELECTRICAL CHARACTERISTICS(T<sub>a</sub>=25°C unless otherwise noted)**

Parameter	Symbol	Test Condition	Min	Type	Max	Unit
<b>Static Parameters</b>						
Source to Source Breakdown Voltage	BV <sub>SSS</sub>	I <sub>S</sub> =250μA, V <sub>GS</sub> =0V,	20			V
Zero- Gate Voltage Source Current	I <sub>SSS</sub>	V <sub>SS</sub> =16V, V <sub>GS</sub> =0V			1	μA
Gate to Source Leakage Current	I <sub>GSS</sub>	V <sub>SS</sub> =0V, V <sub>GS</sub> = ±8V			±10	μA
Cutoff Voltage	V <sub>GS(off)</sub>	V <sub>SS</sub> =10V, I <sub>S</sub> =250μA	0.5	0.8	1.3	V
Forward Transfer Admittance	y <sub>gFs</sub>	V <sub>SS</sub> =10V, I <sub>S</sub> =3A	1	9		S
Static Source to Source On-Resistance	R <sub>SS(on)</sub>	V <sub>GS</sub> =4.5V, I <sub>S</sub> =3A	14	20.5	26	mΩ
		V <sub>GS</sub> =4.0V, I <sub>S</sub> =3A	15	21.5	27	
		V <sub>GS</sub> =3.8V, I <sub>S</sub> =3A	16	22.0	28	
		V <sub>GS</sub> =3.1V, I <sub>S</sub> =3A	18	23.0	30	
		V <sub>GS</sub> =2.5V, I <sub>S</sub> =3A	19	26.0	35	
Turn-on Delay Time	t <sub>d(on)</sub>	V <sub>SS</sub> =10V, I <sub>S</sub> =3A V <sub>GS</sub> =4.5V		0.9		μS
Turn-on Rise Time	t <sub>r</sub>			4.6		
Turn-Off Delay Time	t <sub>d(off)</sub>			12		
Turn-Off Fall Time	t <sub>f</sub>			12		
Total Gate Charge	Q <sub>g</sub>	V <sub>SS</sub> =10V, I <sub>S</sub> =6A, V <sub>GS</sub> =4.5V		11		nC
Diode Forward Voltage	V <sub>F(S-S)</sub>	V <sub>GS</sub> =0V, I <sub>S</sub> =1A			1.2	V

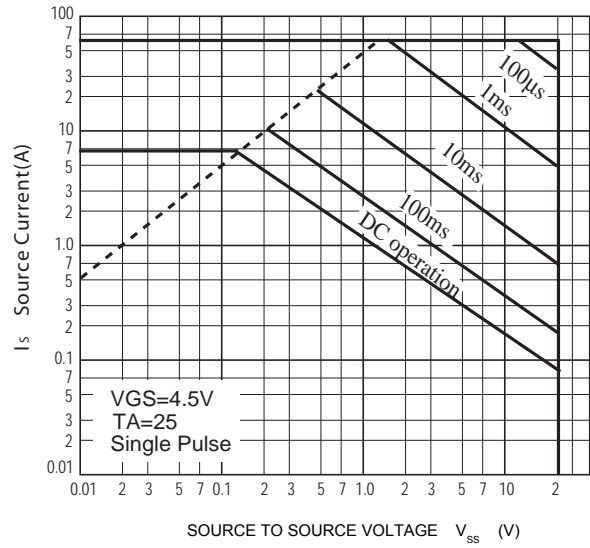
**Typical Electrical and Thermal Characteristics**



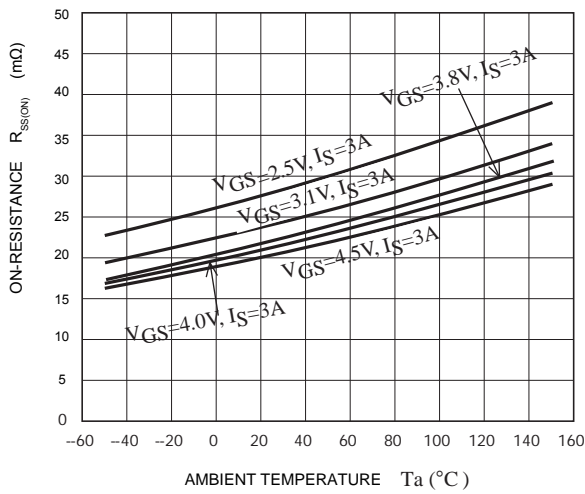
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



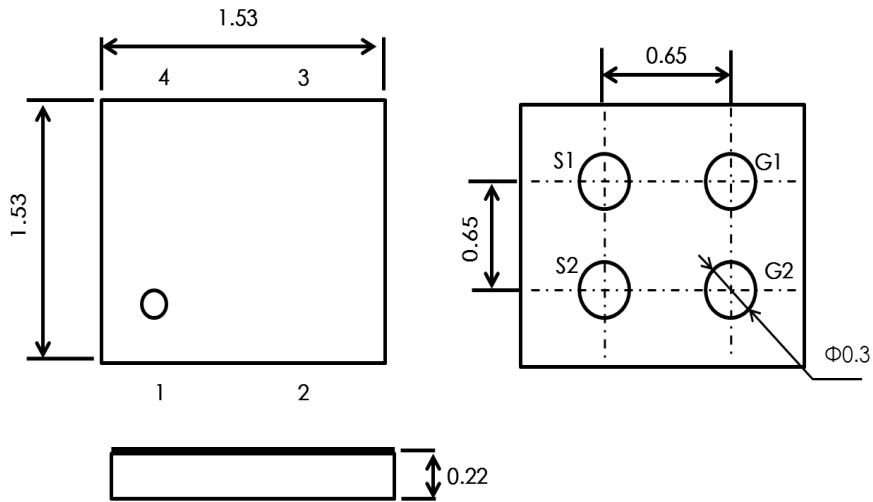
Maximum Safe Operating Area



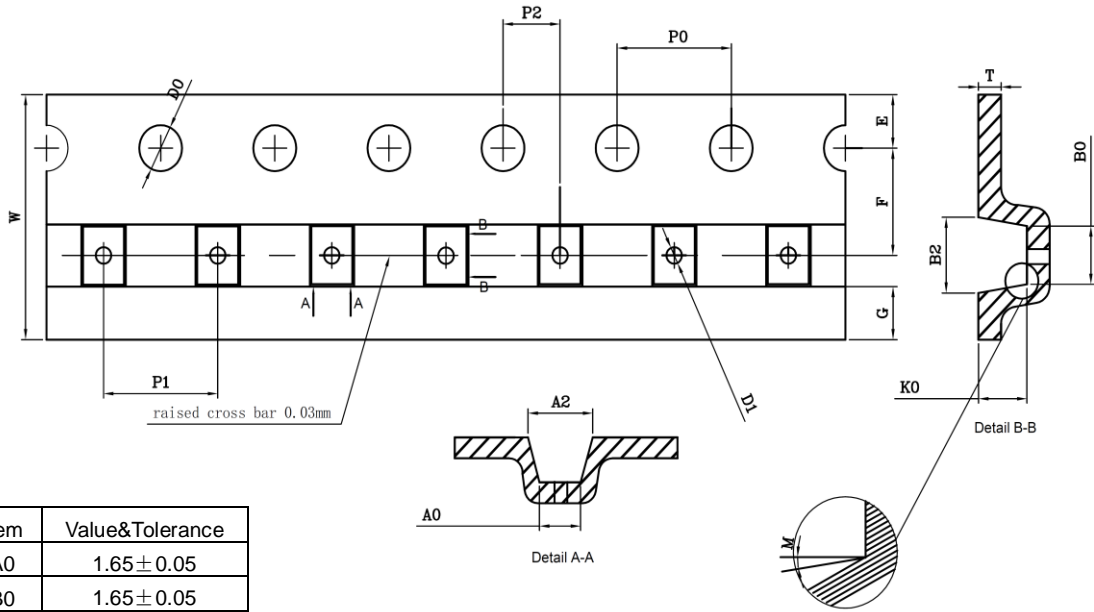
$R_{SS(ON)}$  —  $T_a$



**CSPA1515-4 Package Outline Dimensions(Unit:mm)**



**CSPA1515-4 Tape(Unit:mm)**



Item	Value&Tolerance
A0	1.65±0.05
B0	1.65±0.05
K0	0.50±0.05
A2	NA
B2	NA
D0	1.50+0.10/0.00
D1	1.00MIN
P0	4.00TYP
P1	4.00TYP
P2	2.00±0.05
E	1.75±0.10
F	3.50±0.05
G	NA
T	0.20±0.05
W	8.00+0.30/-0.10
M	MAX 3°