CE2016

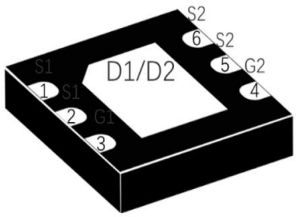
RoHS COMPLIANT

20V Dual N-Channel MOSFET

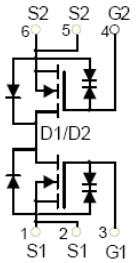
Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
20V	15mΩ@4.5V	7A
	18.5mΩ@2.5V	

DFN2X2-6L



Schematic diagram



Feature

- Trench Technology Power MOSFET
- Low $R_{DS(ON)}$
- Low Gate Charge
- ESD Protected

Application

- Load Switch
- DC/DC Converter

MARKING:

ABSOLUTE MAXIMUM RATINGS (T_A = 25℃ unless otherwise noted)

Parameter		Symbol	Value	Unit
Drain - Source Voltage		V_{DS}	20	V
Gate - Source Voltage		V_{GS}	±12	V
Continuous Drain Current[1,5]	T_A = 25℃	I_D	7	A
Pulsed Drain Current[2]		I_{DM}	28	A
Power Dissipation[4,5]	T_A = 25℃	P_D	0.75	W
Thermal Resistance from Junction to Ambient[5]		$R_{\theta JA}$	167	℃/W
Junction Temperature		T_J	150	℃
Storage Temperature		T_{STG}	-55~ +150	℃

Electrical Characteristics (T_A=25℃ unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Off Characteristics						
Drain - Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D = 250μA	20			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = 16V, V_{GS} = 0V			1	μA
Gate - Body Leakage Current	I_{GSS}	V_{GS} = ±10V, V_{DS} = 0V			±4	μA
On Characteristics[3]						
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = 250μA	0.5	0.75	1.1	V
Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS} = 4.5V, I_D = 3A		15	22	mΩ
		V_{GS} = 2.5V, I_D = 3A		18.5	26	
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{DS} = 10V, V_{GS} = 0V, f = 0.1MHz		413		pF
Output Capacitance	C_{oss}			101		
Reverse Transfer Capacitance	C_{rss}			6.7		
Gate Resistance	R_g	V_{DS} = 0V, V_{GS} = 0V, f = 0.1MHz		3636		Ω
Switching Characteristics						
Total Gate Charge	Q_g	V_{DS} = 10V, V_{GS} = 4.5V, I_D = 3A		7.6		nC
Gate-Source Charge	Q_{gs}			0.5		
Gate-Drain Charge	Q_{gd}			2.5		
Turn-On Delay Time	$t_{d(on)}$	V_{DD} = 10V, V_{GS} = 4.5V, R_L = 3Ω, R_G = 3Ω		7		ns
Turn-On Rise Time	t_r			41		
Turn-Off Delay Time	$t_{d(off)}$			18		
Turn-Off Fall Time	t_f			12		
Source - Drain Diode Characteristics						
Diode Forward Voltage[3]	V_{SD}	V_{GS} = 0V, I_S = 1A			1.2	V

Notes :

1.The maximum current rating is limited by package.

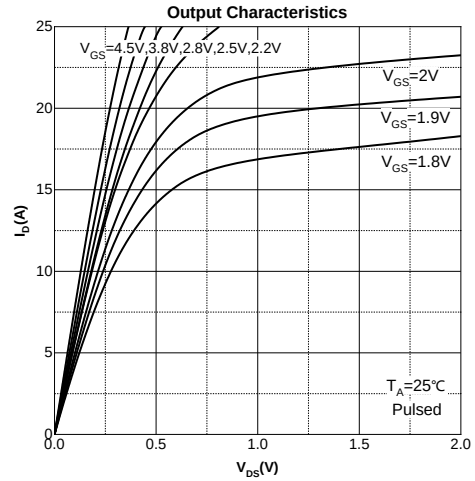
2.Pulse Test : Pulse Width ≤ 10μs, duty cycle ≤ 1%.

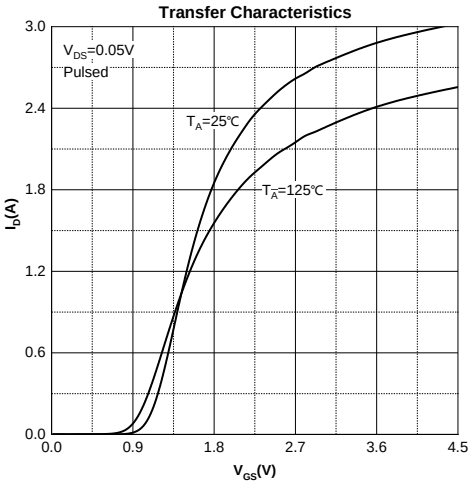
3.Pulse Test : Pulse Width ≤ 300μs, duty cycle ≤ 2%.

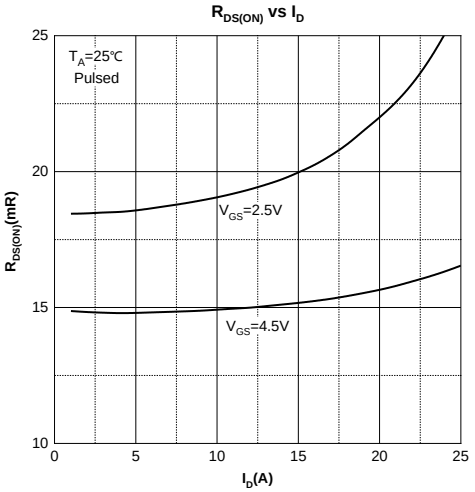
4.The power dissipation P_D is limited by $T_{J(MAX)}$ = 150°C.

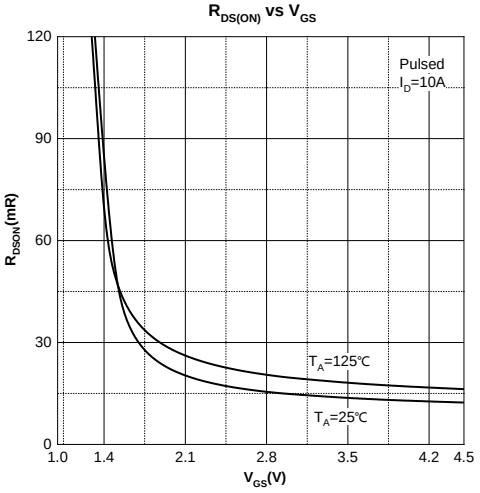
5.Device mounted on 1in^2 FR-4 board with 2oz. Copper, in a still air environment with T_A =25°C.

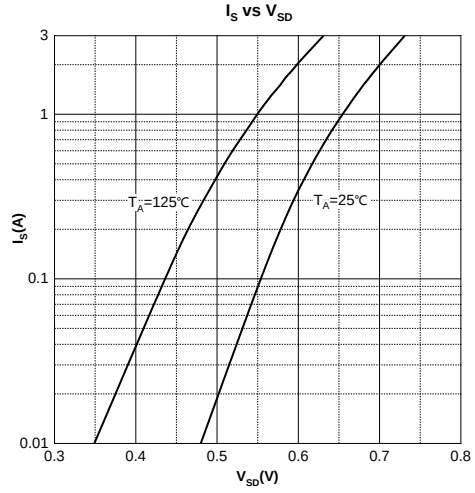
Typical Characteristics

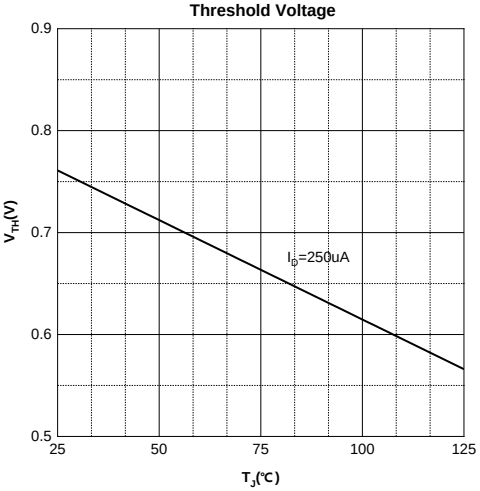


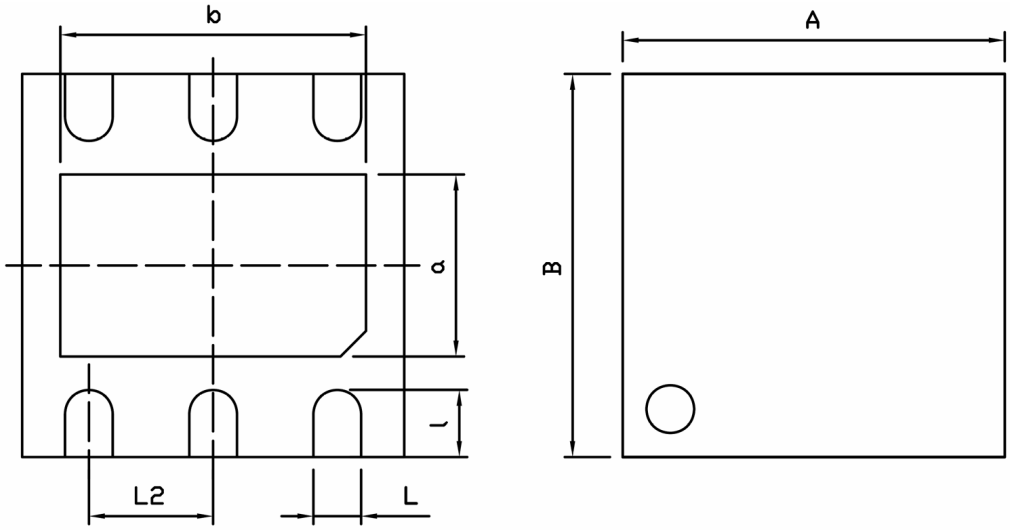


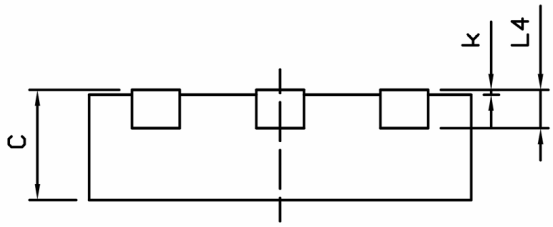












Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.950	2.050	0.077	0.081
B	1.950	2.050	0.077	0.081
C	0.450	0.550	0.018	0.022
L	0.200	0.300	0.008	0.012
L2	0.650TYP		0.026TYP	
L4	0.152TYP		0.006TYP	
a	0.900	1.000	0.035	0.039
b	1.550	1.650	0.061	0.065
l	0.300	0.400	0.012	0.016
k	0.000	0.050	0.000	0.002