

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
-16V	32mΩ@-4.5V	-6A
	45mΩ@-2.5V	

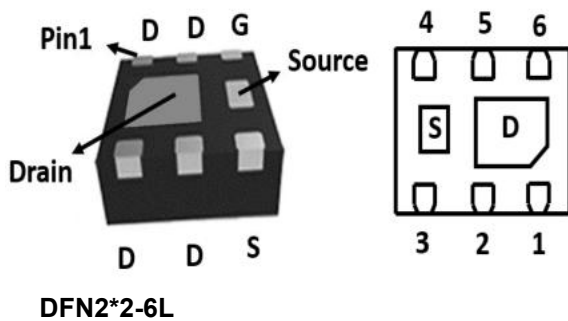
Feature

- Trench Technology
- Supper high density cell design
- Excellent ON resistance for higher DC current
- Extremely Low Threshold Voltage

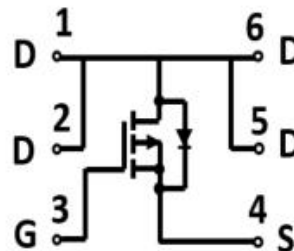
Application

- Driver for Relay, Solenoid, Motor, LED etc.
- DC-DC converter circuit
- Power Switch
- Load Switch
- Charging

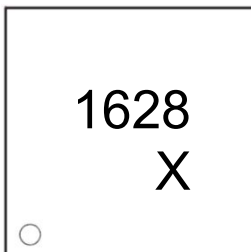
Package



Circuit diagram



Marking



Absolute maximum ratings (Ta=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	-16	V
Gate-Source Voltage	V_{GS}	±10	V
Continuous Drain Current	I_D	-6	A
Pulsed Drain Current ¹⁾	I_{DM}	-24	A
Power Dissipation	P_D	1.4	W
Thermal Resistance Junction-to-Ambient	$R_{\theta JA}$	88	°C/W
Junction Temperature	T_J	150	°C
Storage Temperature	T_{STG}	-55 ~ +150	°C

Electrical characteristics (Ta=25 °C unless otherwise noted)

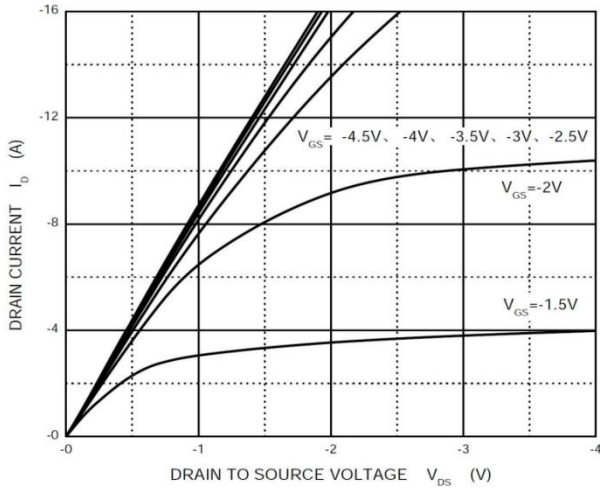
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = -250\mu A$	-16			V
Zero gate voltage drain current	I_{DSS}	$V_{DS} = -16V, V_{GS} = 0V$			-1	μA
Gate-body leakage current	I_{GSS}	$V_{GS} = \pm 10V, V_{DS} = 0V$			±100	nA
Gate threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-0.4	-0.7	-1.0	V
Drain-source on-resistance	$R_{DS(on)}$	$V_{GS} = -4.5V, I_D = -3.5A$		28	32	mΩ
		$V_{GS} = -2.5V, I_D = -3.0A$		38	45	
Dynamic characteristics²⁾						
Input Capacitance	C_{iss}	$V_{GS} = 0V, V_{DS} = -4V, f = 1MHz$		740		pF
Output Capacitance	C_{oss}			290		
Reverse Transfer Capacitance	C_{rss}			190		
Total Gate Charge	Q_g	$V_{DS} = -2.5V, V_{GS} = -4.5V, I_D = -4.1A$		4.5		nC
Gate-Source Charge	Q_{gs}			1.2		
Gate-Drain Charge	Q_{gd}			1.6		
Turn-on delay time	$t_{d(on)}$	$V_{DS} = -4V, V_{GS} = -4.5V, R_L = 1.2\Omega, R_G = 1\Omega$		13		nS
Turn-on rise time	t_r			35		
Turn-off delay time	$t_{d(off)}$			32		
Turn-off fall time	t_f			10		
Source-Drain Diode characteristics						
Diode Forward voltage	V_{SD}	$V_{GS} = 0V, I_S = -1.0A$			-1.2	V

Notes:

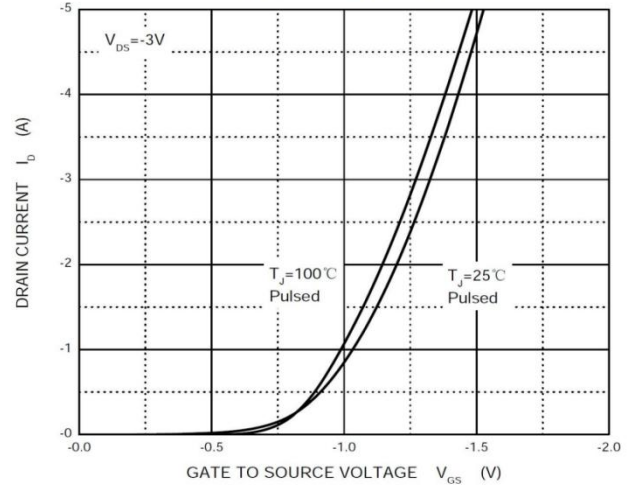
- 1) Repetitive Rating: Pulse width limited by maximum junction temperature.
- 2) Dynamic characteristics Guaranteed by design, not subject to production testing.

Typical Characteristics

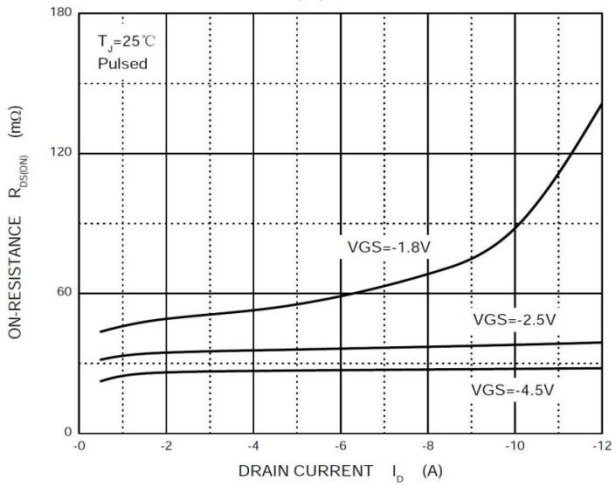
Output Characteristics



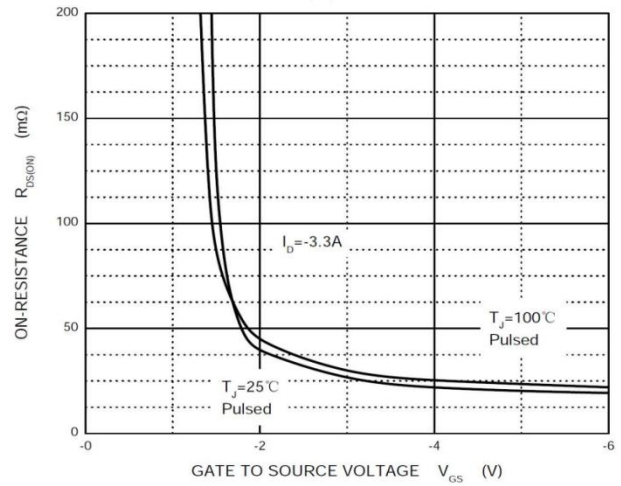
Transfer Characteristics



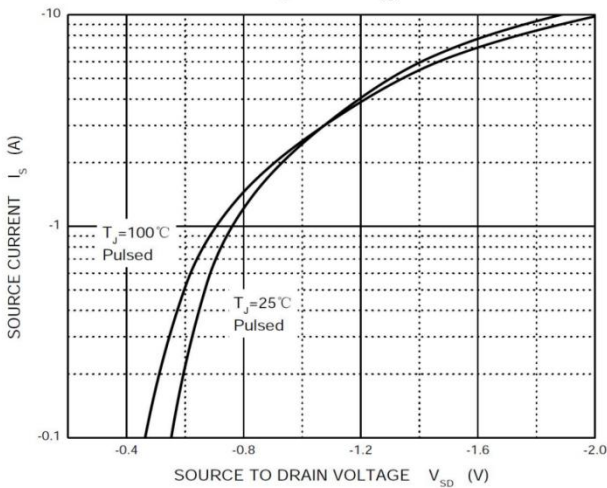
$R_{DS(ON)}$ — I_D



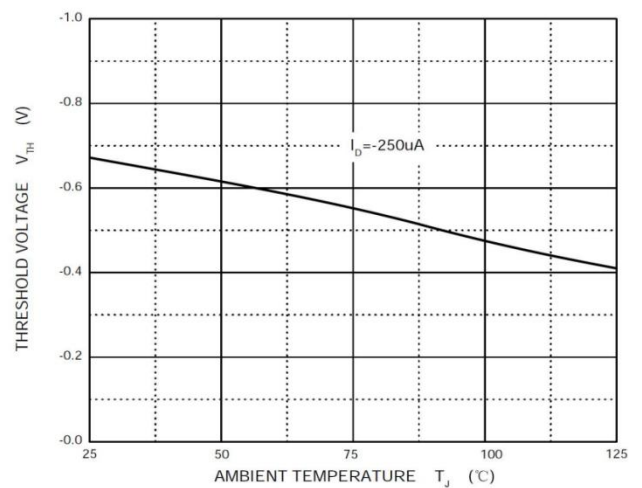
$R_{DS(ON)}$ — V_{GS}



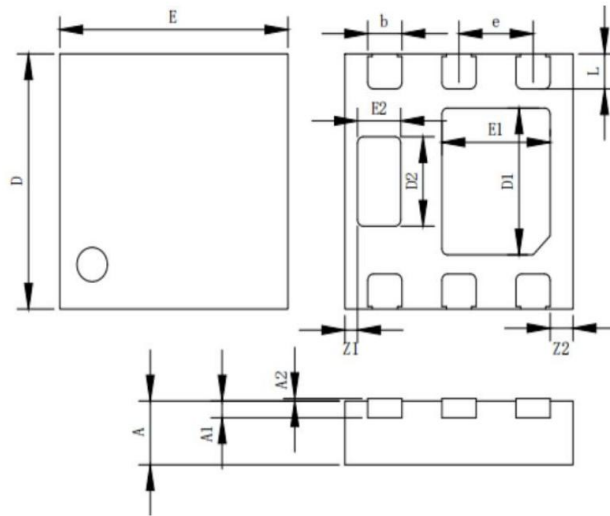
I_S — V_{SD}



Threshold Voltage



DFN2*2-6L Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.45	0.55	0.018	0.022
A1	0.150 REF		0.006 REF	
A2	0.00	0.05	0.000	0.002
D	1.95	2.05	0.077	0.081
E	1.95	2.05	0.077	0.081
D1	1.10	1.20	0.044	0.047
E1	0.90	1.00	0.035	0.039
D2	0.65	0.75	0.026	0.030
E2	0.33	0.43	0.013	0.017
Z1	0.06	0.16	0.002	0.006
Z2	0.15	0.25	0.005	0.010
b	0.25	0.35	0.010	0.014
e	0.65 BSC		0.026 BSC	
L	0.23	0.33	0.009	0.013