

Dual P-Channel 30-V (D-S) MOSFET

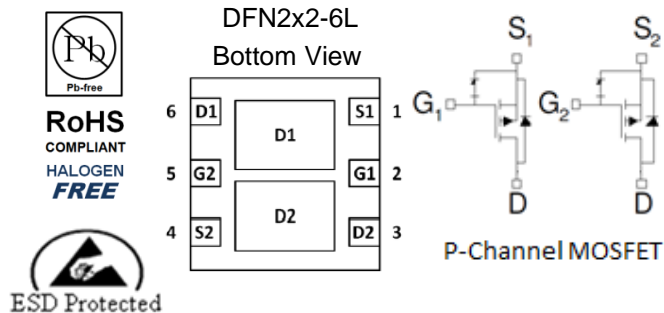
Key Features:

- Low $r_{DS(on)}$ trench technology
- Low thermal impedance
- Fast switching speed

Typical Applications:

- Load switches
- Low power buck/boost converters
- Power routing in battery powered devices

PRODUCT SUMMARY		
V_{DS} (V)	$r_{DS(on)}$ (m Ω)	I_D (A)
-30	220 @ $V_{GS} = -4.5V$	-2.2
	300 @ $V_{GS} = -2.5V$	-1.9



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)

Parameter	Symbol	Limit	Units
Drain-Source Voltage	V_{DS}	-30	V
Gate-Source Voltage	V_{GS}	± 8	
Continuous Drain Current ^a	I_D	$T_A=25^\circ\text{C}$	-2.2
		$T_A=70^\circ\text{C}$	-1.7
Pulsed Drain Current ^b	I_{DM}	-10	
Continuous Source Current (Diode Conduction) ^a	I_S	-1.7	A
Power Dissipation ^a	P_D	$T_A=25^\circ\text{C}$	1.5
		$T_A=70^\circ\text{C}$	0.95
Operating Junction and Storage Temperature Range	T_J, T_{stg}	-55 to 150	$^\circ\text{C}$

THERMAL RESISTANCE RATINGS

Parameter	Symbol	Maximum	Units
Maximum Junction-to-Ambient ^a	$R_{\theta JA}$	$t \leq 10$ sec	83
		Steady State	120

Notes

- Surface Mounted on 1" x 1" FR4 Board.
- Pulse width limited by maximum junction temperature

Electrical Characteristics

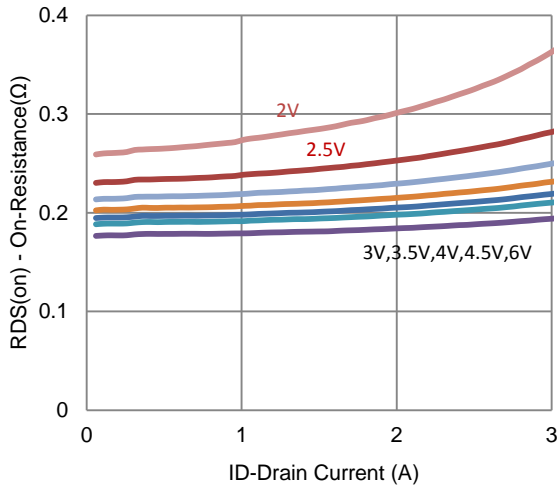
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Static						
Gate-Source Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250 \mu A$	-0.3			V
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0 V, V_{GS} = \pm 8 V$			± 10	μA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -24 V, V_{GS} = 0 V$			-1	μA
		$V_{DS} = -24 V, V_{GS} = 0 V, T_J = 55^\circ C$			-25	
On-State Drain Current ^a	$I_{D(on)}$	$V_{DS} = -5 V, V_{GS} = -4.5 V$	-4			A
Drain-Source On-Resistance ^a	$r_{DS(on)}$	$V_{GS} = -4.5 V, I_D = -2 A$			220	m Ω
		$V_{GS} = -2.5 V, I_D = -1.6 A$			300	
Forward Transconductance ^a	g_{fs}	$V_{DS} = -15 V, I_D = -2 A$		22		S
Diode Forward Voltage ^a	V_{SD}	$I_S = -0.9 A, V_{GS} = 0 V$		-0.84		V
Dynamic ^b						
Total Gate Charge	Q_g	$V_{DS} = -15 V, V_{GS} = -4.5 V,$ $I_D = -2 A$		4		nC
Gate-Source Charge	Q_{gs}			0.9		
Gate-Drain Charge	Q_{gd}			0.9		
Turn-On Delay Time	$t_{d(on)}$	$V_{DS} = -15 V, R_L = 7.5 \Omega,$ $I_D = -2 A,$ $V_{GEN} = -4.5 V, R_{GEN} = 6 \Omega$		7		ns
Rise Time	t_r			10		
Turn-Off Delay Time	$t_{d(off)}$			28		
Fall Time	t_f			16		
Input Capacitance	C_{iss}	$V_{DS} = -15 V, V_{GS} = 0 V, f = 1 MHz$		190		pF
Output Capacitance	C_{oss}			22		
Reverse Transfer Capacitance	C_{rss}			18		

Notes

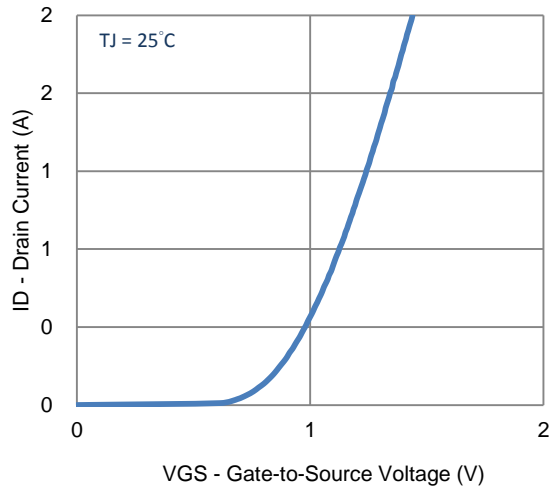
- Pulse test: $PW \leq 300 \mu s$ duty cycle $\leq 2\%$.
- Guaranteed by design, not subject to production testing.

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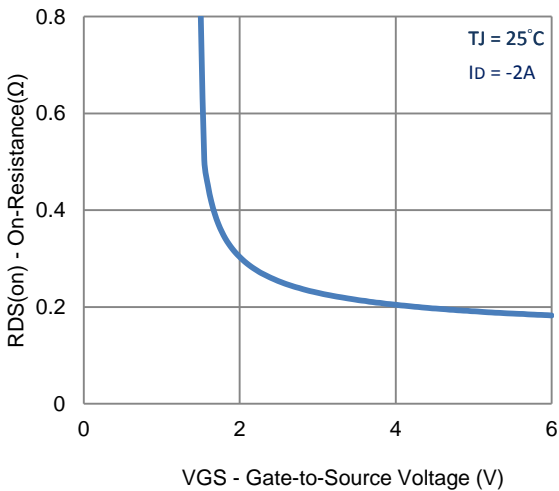
Typical Electrical Characteristics



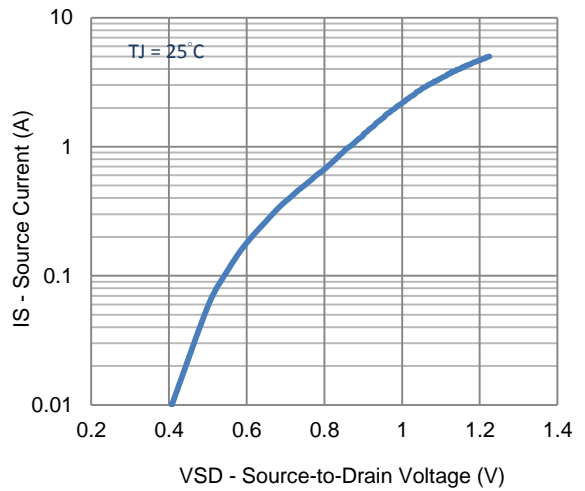
1. On-Resistance vs. Drain Current



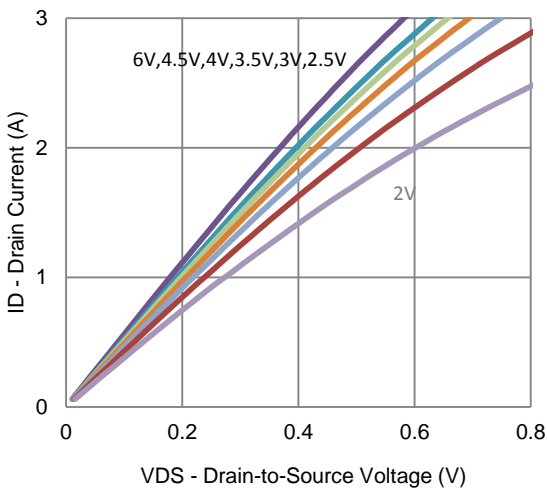
2. Transfer Characteristics



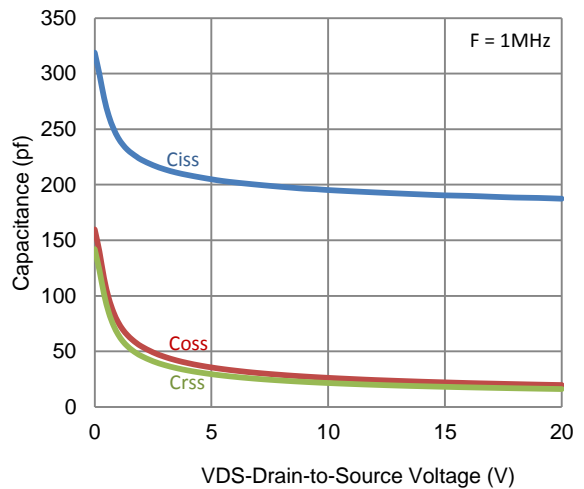
3. On-Resistance vs. Gate-to-Source Voltage



4. Drain-to-Source Forward Voltage

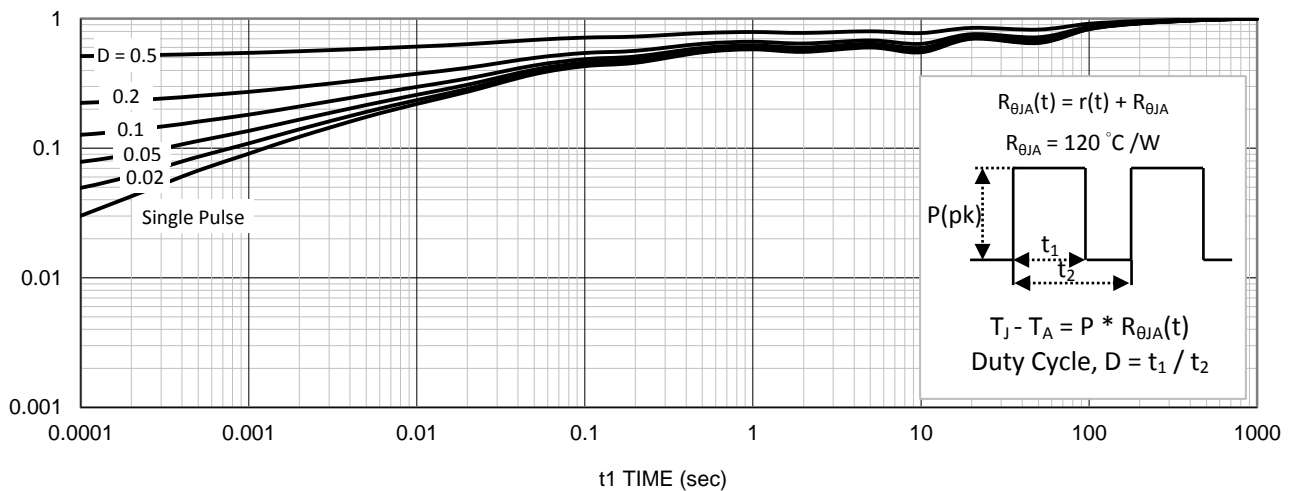
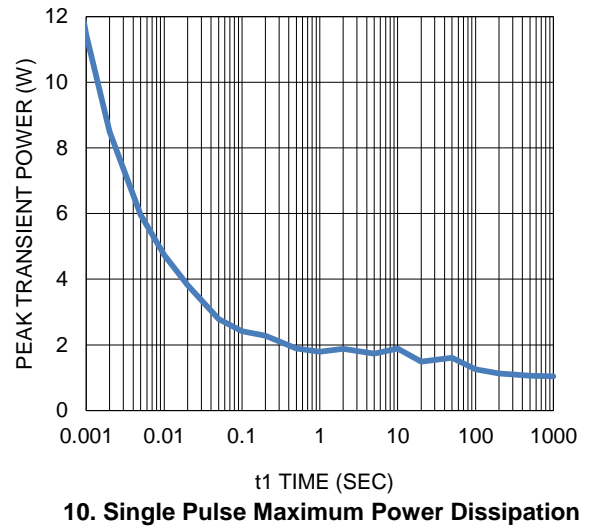
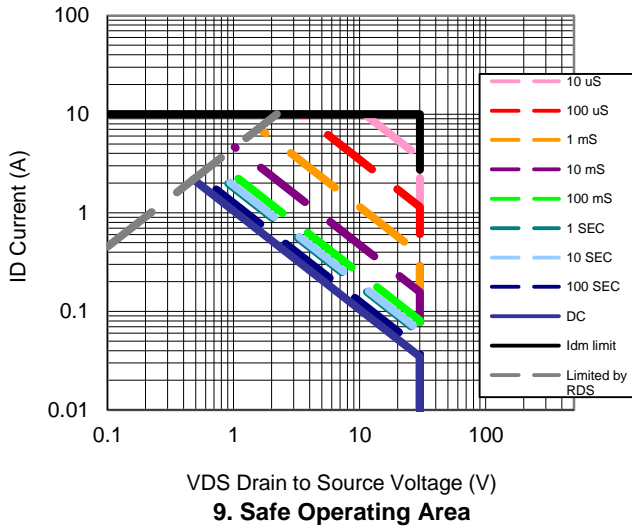
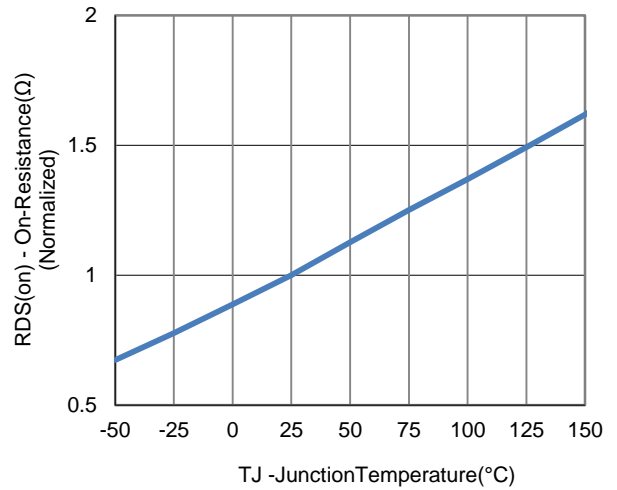
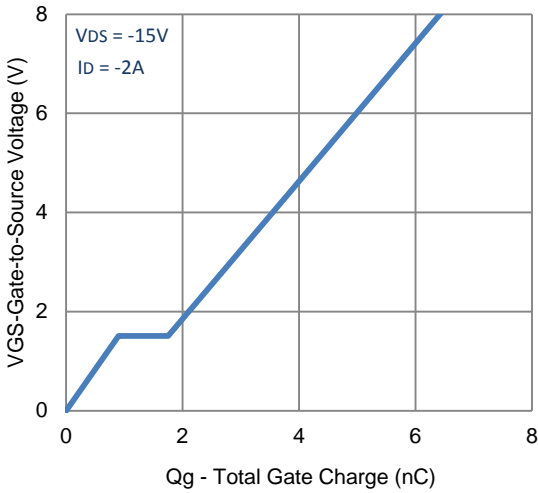


5. Output Characteristics

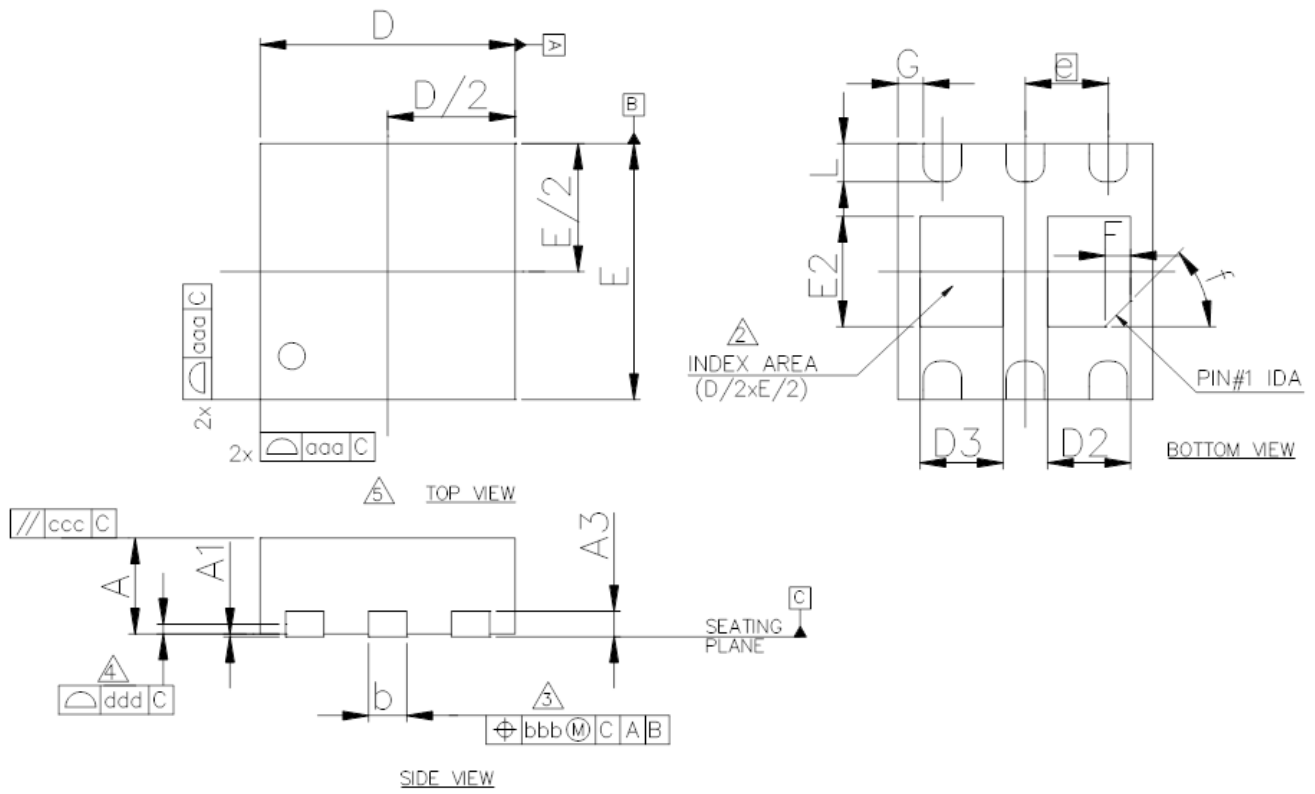


6. Capacitance

Typical Electrical Characteristics



Package Information



SYMBOL	DIMENSIONS IN MILLIMETERS			DIMENSIONS IN INCHES		
	MIN.	NOM.	MAX.	MIN.	NOM.	MAX.
A	0.70	0.75	0.80	0.028	0.030	0.032
A1	0.00	0.02	0.05	0.000	0.001	0.002
A3	---	0.20 REF	---	---	0.008 REF	---
b	0.25	0.30	0.35	0.010	0.012	0.014
D	---	2.00 BSC	---	---	0.079 BSC	---
D2	0.60	0.65	0.70	0.024	0.026	0.028
D3	0.60	0.65	0.70	0.024	0.026	0.028
E	---	2.00 BSC	---	---	0.079 BSC	---
E2	0.81	0.86	0.91	0.032	0.034	0.036
G	---	0.65 BSC	---	---	0.026 BSC	---
L	0.25	0.30	0.35	0.010	0.012	0.014
F	---	0.20 REF	---	---	0.008 REF	---
f	---	45°	---	---	45°	---
g	0.15	0.20	0.25	0.006	0.008	0.010
aaa	---	0.15	---	---	0.006	---
bbb	---	0.10	---	---	0.004	---
ccc	---	0.10	---	---	0.004	---
ddd	---	0.08	---	---	0.003	---