

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
30V	27mΩ@10V	7.7A
	33mΩ@4.5V	
	45mΩ@2.5V	

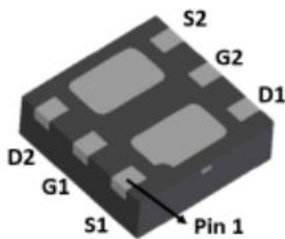
Feature

- Advanced trench process technology
- High density cell design for ultra low on-resistance
- High Speed switching
- Suffix "-Q1" for AEC-Q101

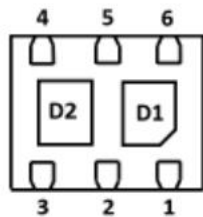
Application

- Battery protectio
- Load switch
- Power management

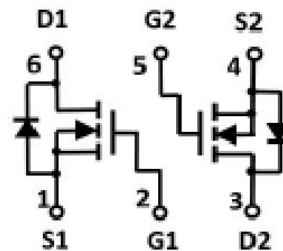
Package



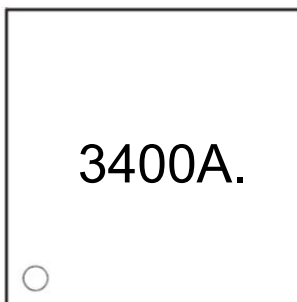
DFN2*2-6L



Circuit diagram



Marking



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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	±12	V
Continuous Drain Current	I_D	7.7	A
Pulsed Drain Current	I_{DM}	30	A
Power Dissipation	P_D	2	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	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	30			V
Zero gate voltage drain current	I_{DSS}	$V_{DS} = 30V, V_{GS} = 0V$			1	μA
Gate-body leakage current	I_{GSS}	$V_{GS} = \pm 12V, V_{DS} = 0V$			±100	nA
Gate threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	0.5		1.5	V
Drain-source on-resistance ¹⁾	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 7.7A$			27	mΩ
		$V_{GS} = 4.5V, I_D = 5.0A$			33	
		$V_{GS} = 2.5V, I_D = 3.0A$			45	
Dynamic characteristics²⁾						
Input Capacitance	C_{iss}	$V_{DS} = 15V, V_{GS} = 0V, f = 1MHz$		535		pF
Output Capacitance	C_{oss}			130		
Reverse Transfer Capacitance	C_{rss}			36		
Total Gate Charge	Q_g	$V_{DS} = 15V, V_{GS} = 4.5V, I_D = 7.7A$		4.8		nC
Gate-Source Charge	Q_{gs}			1.2		
Gate-Drain Charge	Q_{gd}			1.7		
Turn-on delay time	$t_{d(on)}$	$V_{DD} = 15V, V_{GS} = 4.5V, I_D = 1A$ $R_{GEN} = 2.8\Omega$		12		nS
Turn-on rise time	t_r			52		
Turn-off delay time	$t_{d(off)}$			17		
Turn-off fall time	t_f			10		
Source-Drain Diode characteristics						
Diode Forward Current ¹⁾	I_S				7.7	A
Diode Forward voltage	V_{DS}	$V_{GS} = 0V, I_S = 7.7A$			1.2	V

Notes:

- 1) Pulse Test: Pulse Width < 300μs, Duty Cycle ≤2%.
- 2) Guaranteed by design, not subject to production testing.

Typical Characteristics

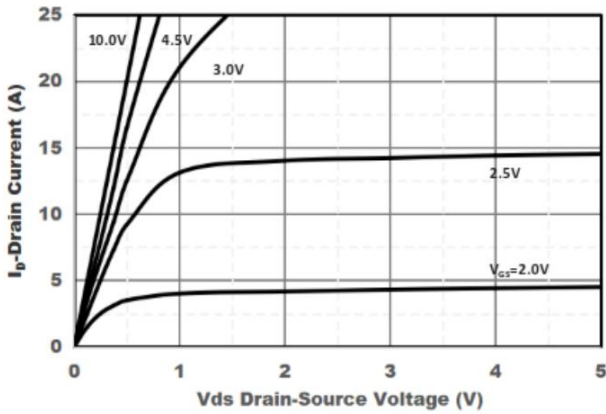


Figure1. Output Characteristics

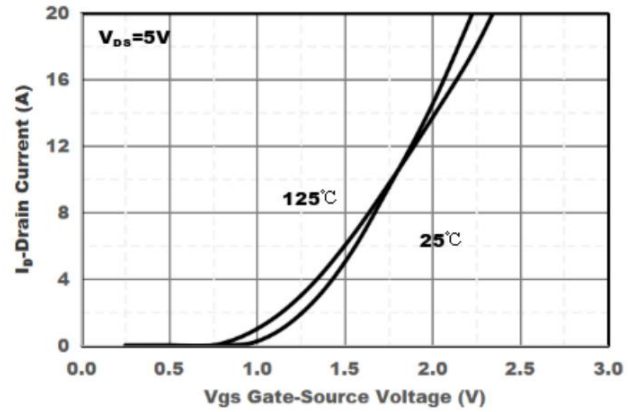


Figure2. Transfer Characteristics

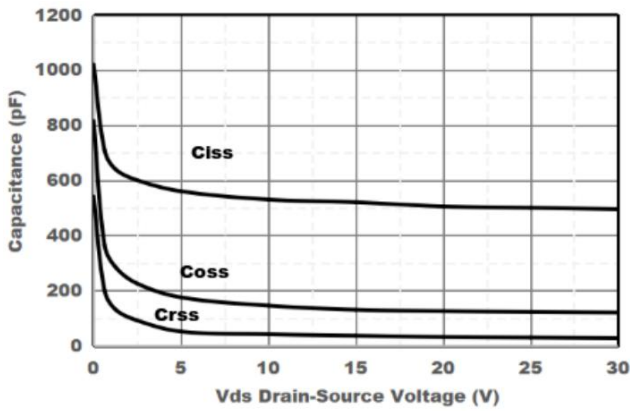


Figure3. Capacitance Characteristics

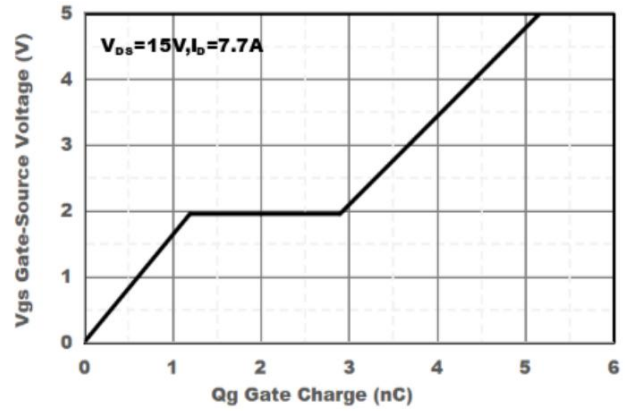


Figure4. Gate Charge

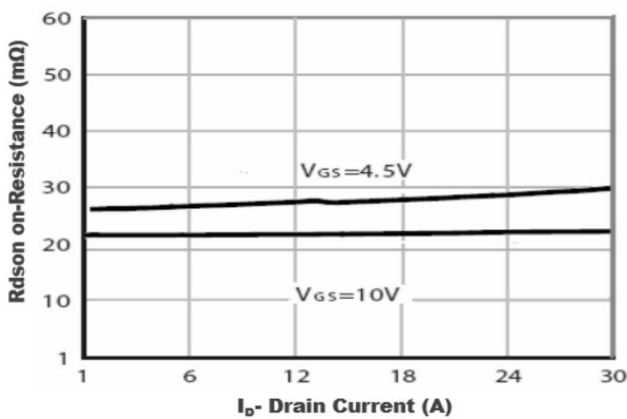


Figure5. Drain-Source on Resistance

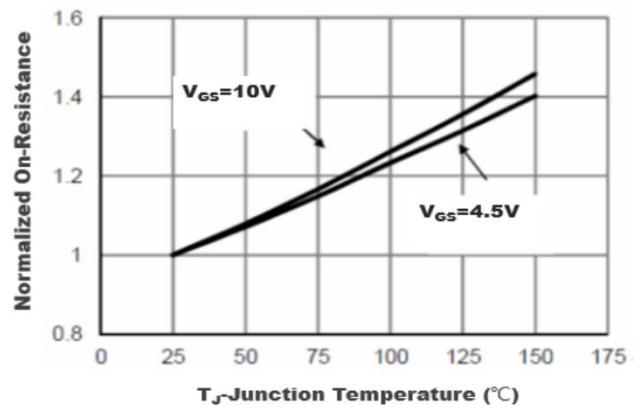
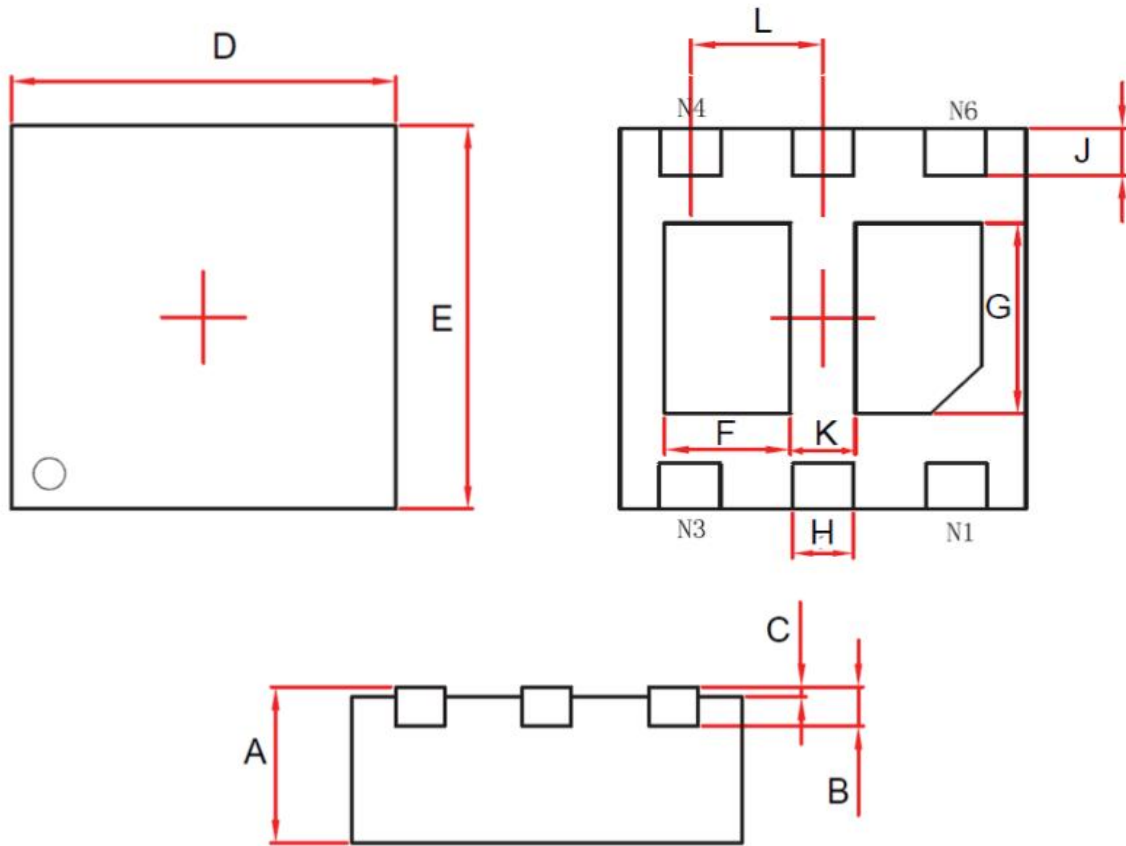


Figure6. Drain-Source on Resistance

DFN2*2-6L Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.750	0.850	0.030	0.034
B	0.200 REF.		0.008 REF.	
C	0.000	0.050	0.000	0.002
D	1.950	2.050	0.077	0.081
E	1.950	2.050	0.077	0.081
F	0.440	0.690	0.017	0.027
G	0.840	1.090	0.033	0.043
H	0.250	0.350	0.010	0.014
J	0.175	0.375	0.007	0.015
K	0.250	0.350	0.010	0.014
L	0.650 TYP.		0.026 TYP.	