

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
200V	280mΩ@10V	4.6A

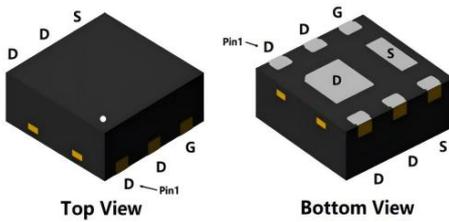
Feature

- Excellent package for heat dissipation
- High density cell design for low $R_{DS(on)}$
- Suffix “-Q1” for AEC-Q101

Application

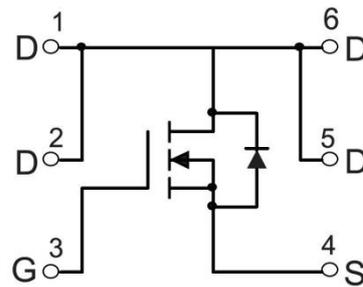
- Industrial power supply

Package

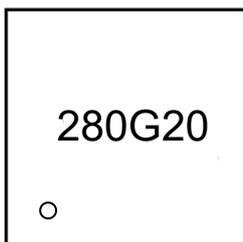


DFN2*2-6L

Circuit diagram



Marking



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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V _{DS}	200	V
Gate-Source Voltage	V _{GS}	±20	V
Continuous Drain Current ^{1,2)} (V _{GS} =10V, Chip limitation)	I _D	4.6	A
Continuous Drain Current ^{1,2)} (V _{GS} =10V, T _C =100°C)	I _D (100°C)	3.2	A
Pulsed Drain Current (t _p ≤10μs)	I _{DM}	18.4	A
Power Dissipation ^{1,2)}	P _D	15.4	W
Thermal Resistance Junction to case	R _{θJC}	9.7	°C/W
Operating Junction Temperature	T _J	-55 ~ +175	°C
Storage Temperature Range	T _{STG}	-55 ~ +175	°C

Electrical characteristics (T_J=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 =250μA	200			V
Zero gate voltage drain current	I _{DSS}	V _{DS} =160V, V _{GS} =0V			1	μA
Gate-body leakage current	I _{GSS}	V _{DS} =0V, V _{GS} =±20V			±100	nA
Gate threshold voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	2.4	3.2	4	V
Drain-source on-resistance	R _{DS(on)}	V _{GS} =10V, I _D =2A		218	280	mΩ
Dynamic characteristics³⁾						
Input Capacitance	C _{iss}	V _{DS} =100V, V _{GS} =0V, f =1MHz		187		pF
Output Capacitance	C _{oss}			22		
Reverse Transfer Capacitance	C _{rss}			1.14		
Total Gate Charge	Q _g	V _{DS} =100V, V _{GS} =10V, I _D =2A		3.8		nC
Gate-Source Charge	Q _{gs}			1		
Gate-Drain Charge	Q _{gd}			1.6		
Turn-on delay time	t _{d(on)}	V _{DS} =100V, V _{GS} =10V, I _D =2A R _G =3Ω		3.5		nS
Turn-on rise time	t _r			3.2		
Turn-off delay time	t _{d(off)}			7.8		
Turn-off fall time	t _f			25.2		
Source-Drain Diode characteristics						
Diode Forward Current	I _S	T _C =25°C			4.6	A
Diode forward voltage	V _{SD}	V _{GS} =0V, I _S =2A			1.2	V
Reverse Recovery Time	T _{rr}	V _{GS} =0V, V _R =100V, I _F =2A, di/dt =-100A/μs		59		nS
Reverse Recovery Charge	Q _{rr}			91		nC

Notes:

- 1) The entire application environment impacts the thermal resistance values shown, they are not constants and are only valid for the particular conditions noted.
- 2) Thermal resistance from junction to soldering point (on the exposed drain pad).
- 3) Guaranteed by design, not subject to production.

Typical Characteristics

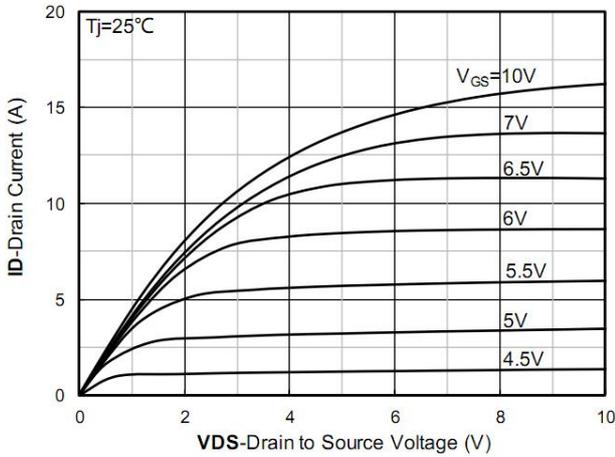


Figure 1. Output Characteristics; typical values

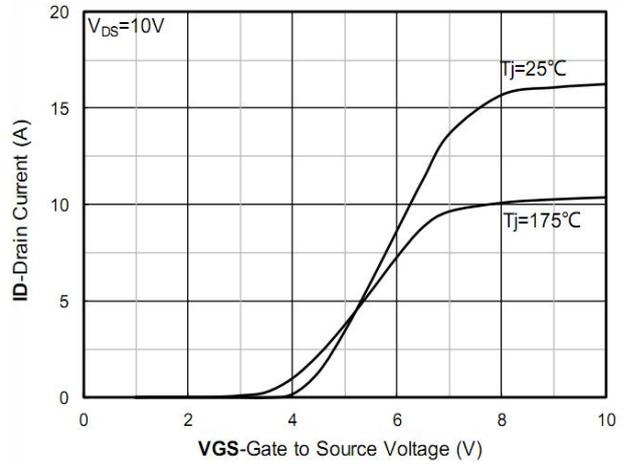


Figure 2. Transfer Characteristics; typical values

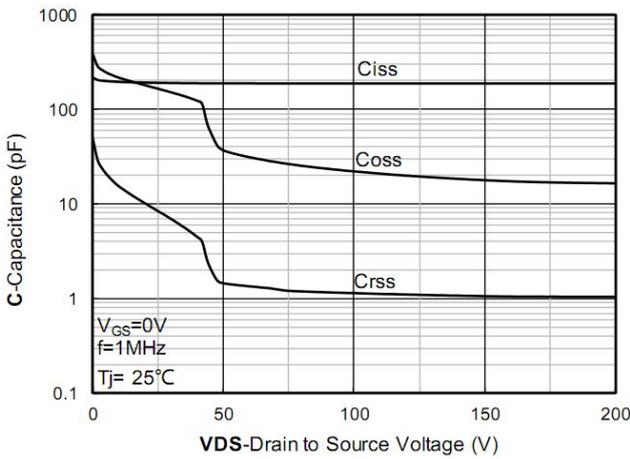


Figure 3. Capacitance Characteristics; typical values

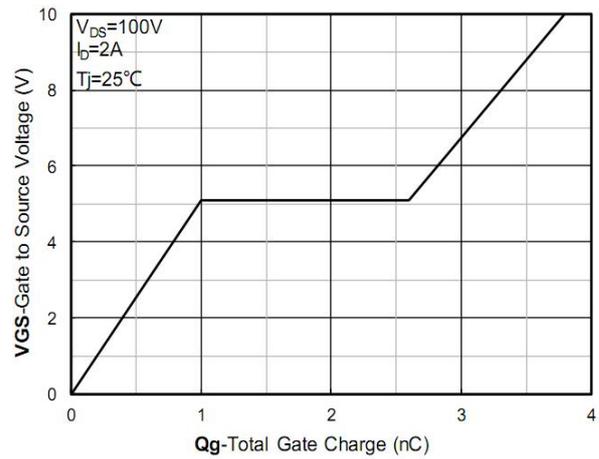


Figure 4. Gate Charge; typical values

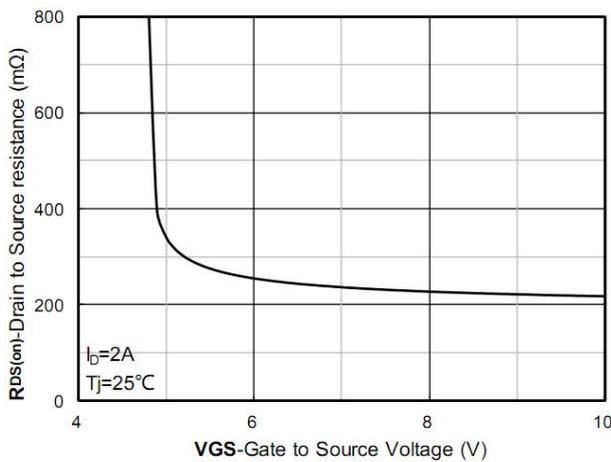


Figure 5. On-Resistance vs. Gate to Source Voltage; typical values

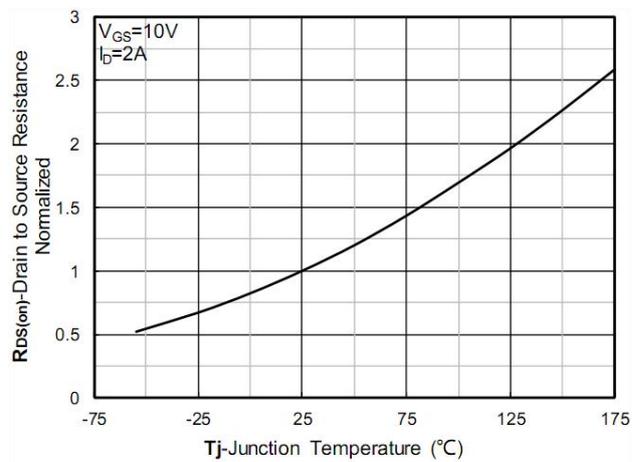


Figure 6. Normalized On-Resistance

Typical Characteristics

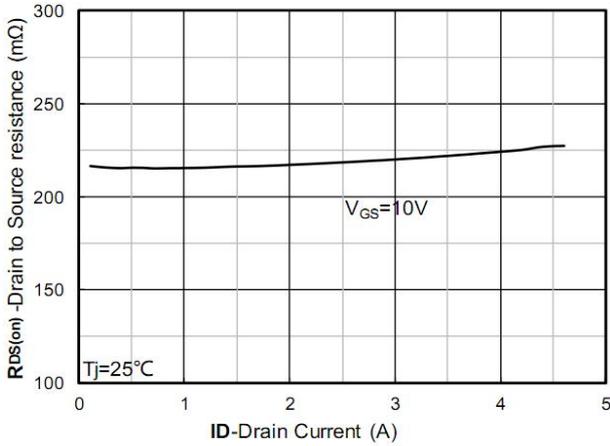


Figure 7. $R_{DS(on)}$ vs. Drain Current; typical values

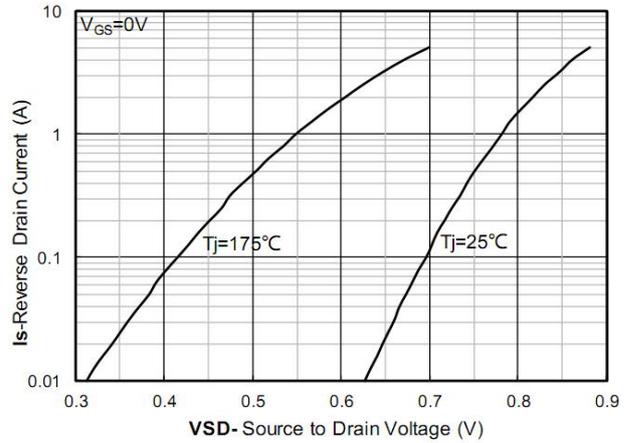


Figure 8. Forward characteristics of reverse diode; typical values

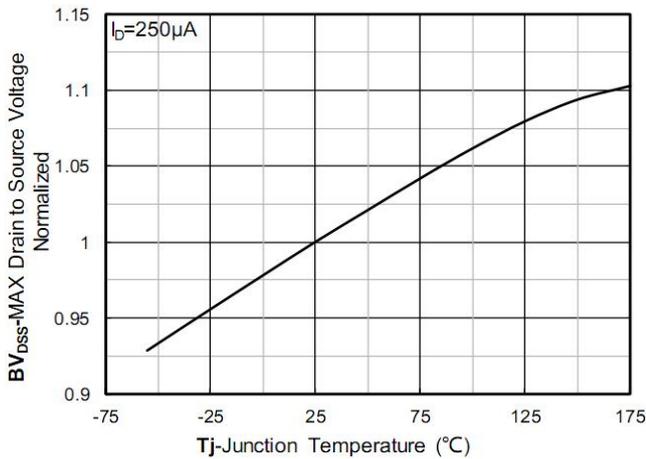


Figure 9. Normalized breakdown voltage

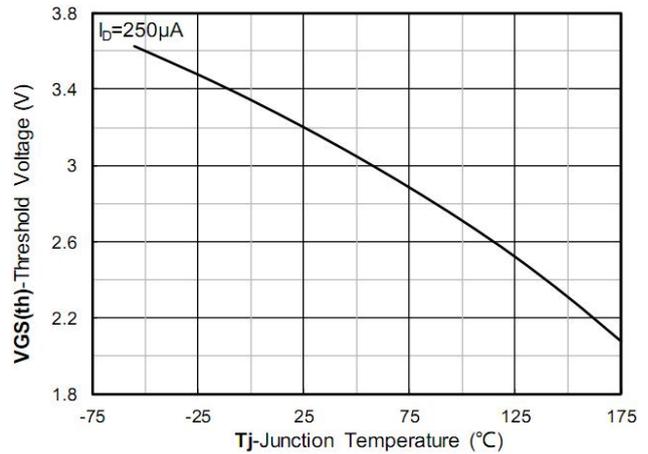


Figure 10. Gate Threshold voltage; typical values

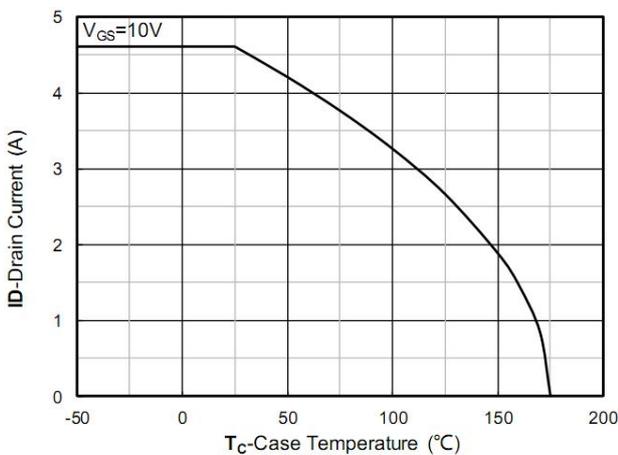


Figure 11. Current dissipation

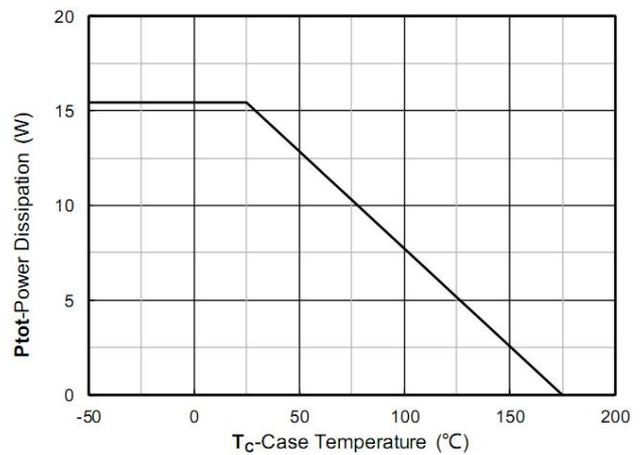


Figure 12. Power dissipation

Typical Characteristics

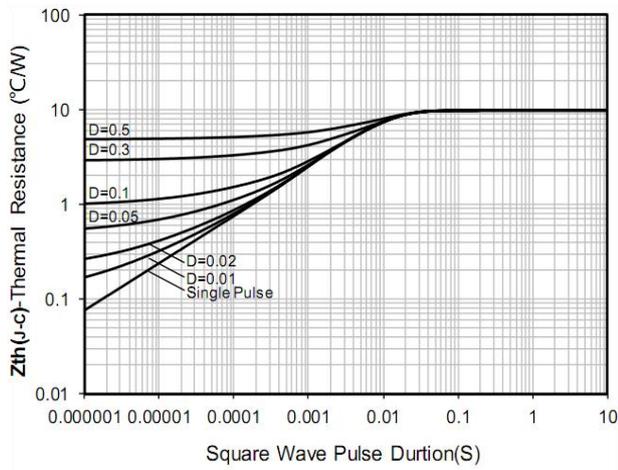


Figure 13. Maximum Transient Thermal Impedance

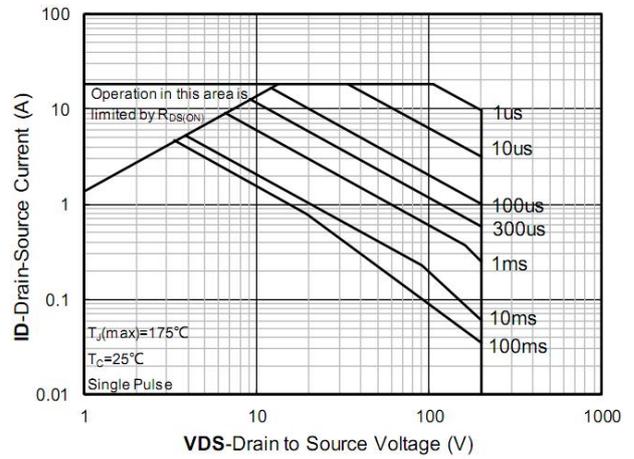
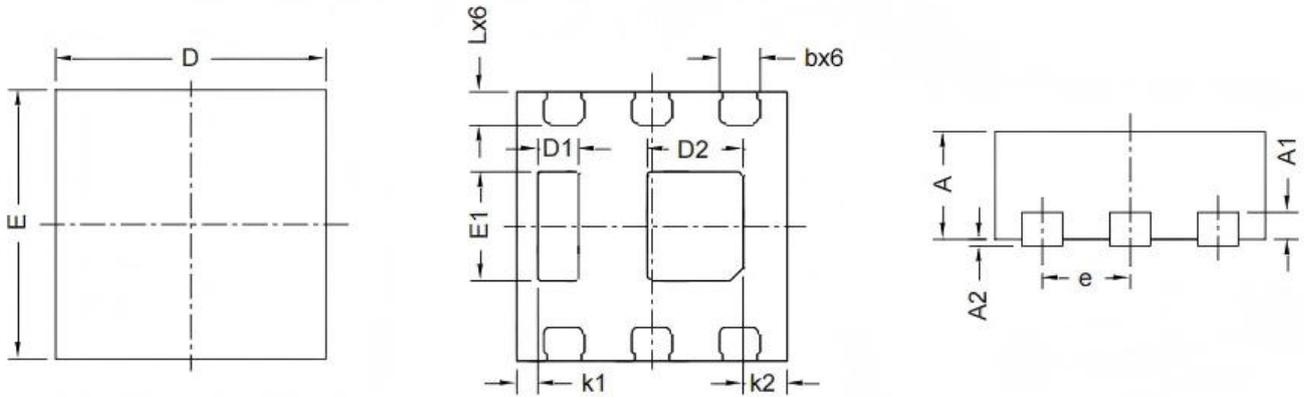


Figure 14. Safe Operation Area

DFN2*2-6L Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
D	1.900	2.100	0.075	0.083
E	1.900	2.100	0.075	0.083
A	0.700	0.900	0.028	0.035
A1	0.200 BSC.		0.008 BSC.	
A2	-	0.100	-	0.004
D1	0.200	0.400	0.008	0.016
D2	0.610	0.810	0.024	0.032
E1	0.710	0.910	0.028	0.036
L	0.150	0.350	0.006	0.014
b	0.200	0.400	0.008	0.016
e	0.650 BSC.		0.026 BSC.	
k1	0.156 BSC.		0.006 BSC.	
k2	0.326 BSC.		0.013 BSC.	