Preliminary Datasheet

N Channel 20V (DS) MOSFET

FEATURES

- Advance Trench Process Technology
- High Density Cell Design for Ultra Low Onresistance

PRODUCTY SUMMARY			
V_{DS}	$R_{DS(on)}$ m(Ω)		I_D(A)
20	12	@V_{GS}=4.5V	19.4
	15	@V_{GS}=2.5V	17.3

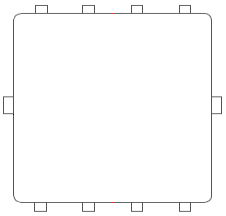
Application

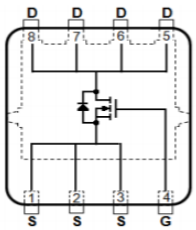
- Portable Devices
- Consumer Electronics

Mechanical

- Case: DFN3333 Package

DFN3333





Packing Information

Package	Packing
DFN3333	5Kpcs/13"Reel

Maximum Ratings (T_A=25°C unless otherwise specified)			
Parameter	**Symbol**	**Limit**	**Unit**
DrainSource Voltage	V_{DS}	20	V
GateSource Voltage	V_{GS}	±12	V
Continuous Drain Current [1)]	I_D	20	A
Maximum Power Dissipation	P_D	5	W
Pulsed Drain Current [2)]	I_{DM}	80	A
Operating Junction and Storage Temperature Range	T_J, T_{STG}	55~150	°C

Typical Thermal Resistance			
Parameter	**Symbol**	**Limit**	**Unit**
JunctiontoAmbient Thermal Resistance [3)]	$R_{\theta JA}$	65	°C/W

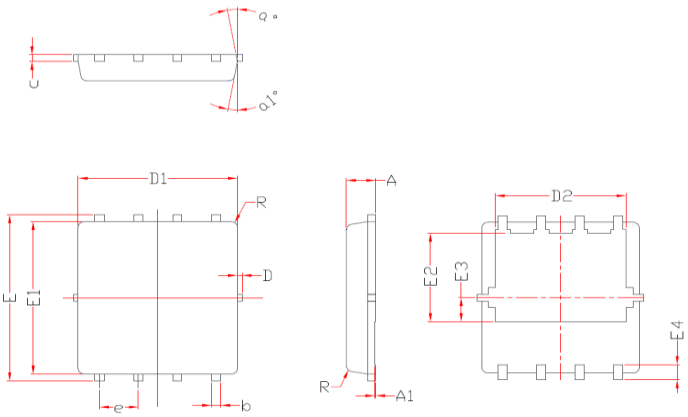
Note:
1. Fused current that based on wire numbers and diameter
2. Repetitive Rating: Pulse width limited by the maximum junction temperature
3. 1in2 2oz Cu PCB board

Electrical Characteristics (T_A = 25°C UNLESS OTHERWISE NOTED)						
Characteristics	Symbol	Test Condition	Limits			Unit
			Min	Typ	Max	
Static						
DrainSource Breakdown Voltage	B_{VDSS}	V_{GS} = 0V, I_D =250uA	20	-	-	V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250uA	0.40	0.63	1.00	V
DrainSource OnState Resistance	$R_{DS(on)}$	V_{GS}=4.5V, I_D=19.4A	-	10	12	mΩ
		V_{GS}=2.5V, I_D=17.3A	-	12	15	mΩ
Zero Gate Voltage Drain Current	I_{DSS}	VDS=20V, VGS=0V	-	-	1	uA
GateSource Leakage Current	I_{GSS}	V_{GS}=±12V, V_{DS}=0V	-	-	±100	nA
Dynamic [3]						
Total Gate Charge	Q_g	V_{DS}=10V, I_D=11A, V_{GS}=4.5V	-	16.0	25.60	nC
Gate-Source Charge	Q_{gs}		-	2.5	-	nC
Gate-Drain Charge	Q_{gd}		-	4.5	-	nC
Input Capacitance	C_{iss}	V_{DS}=10V, V_{GS}=0V, f=1.0MHZ	-	1400	2240	pF
Output Capacitance	C_{oss}		-	170	-	pF
Reverse Transfer Capacitance	C_{rss}		-	135	-	pF
Switching						
Turn-On Delay Time	$t_{d(on)}$	V_{DS}=11V, I_D=1A, V_{GS}=5V,RG=3.3Ω	-	10	-	ns
Turn-On Rise Time	t_r		-	13	-	ns
Turn-Off Delay Time	$t_{d(off)}$		-	28	-	ns
Turn-Off Fall Time	t_f		-	7	-	ns
DrainSource Diode						
Maximum Continuous Body Diode Forward Current	I_S	V_G=V_D=0V , Force Current	-	-	1.2	A
Diode Forward Voltage	V_{SD}	IS=1.0A, VGS=0V	-	-	1.5	V

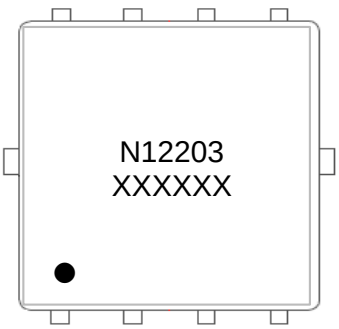
NOTES :
1. Pulse width<300us, Duty cycle<2%.
2. Essentially independent of operating temperature typical characteristics.
3. Repetitive rating, pulse width limited by junction temperature TJ(MAX)=150°C. Ratings are based on low frequency and duty cycles to keep initial TJ =25°C.
4. The maximum current rating is package limited.
5. RQJA is the sum of the junctiontocase and casetoambient thermal resistance where the case thermal reference is defined as the solder mounting surface of the drain pins. Mounted on a 1 inch2 with 2oz.square pad of copper.
6. Guaranteed by design, not subject to production testing.

Package Outline Dimensions (inches and millimeters)

SYMBOL	Dimensions			
	Millimeters		Inches	
	Min	Max	Min	Max
A	0.78	0.82	0.031	0.032
A1	0.00	0.05	0.000	0.002
b	0.30	0.35	0.012	0.014
c	0.15		0.006	
D	0.00	0.05	0.000	0.002
D1	2.98	3.03	0.117	0.119
D2	2.35		0.093	
E	3.20	3.25	0.126	0.128
E1	2.98	3.03	0.117	0.119
E2	1.75		0.069	
E3	0.58		0.023	
E4	0.350	0.45	0.014	0
R	0.20		0.008	
e	0.65BSC			
a°	3°			
a1°	10°			



Marking Information



First line:

AAAAAA = Product number

Second line:

XXXXXX = Tracking number

Third line:Gate Pin Point