

N+P-Channel 20-V (D-S) MOSFET

FEATURES

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

Application

- Portable Devices
- Consumer Electronics

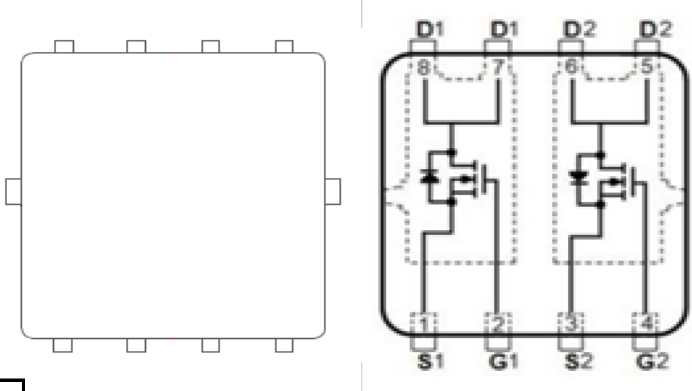
Mechanical

- Case: DFN3333 Package

Packing Information

Package	Packing
DFN3333	5Kpcs/13"Reel

PRODUCTY SUMMARY			
V _{DS}	R _{DS(on)} m(Ω)		I _D (A)
20	6	@V _{GS} =4.5V	20
	7.3	@V _{GS} =2.5V	20
-20	15	@V _{GS} =-4.5V	-17
	18	@V _{GS} =-2.5V	-16



Maximum Ratings (T _A =25°C unless otherwise specified)				
Parameter	Symbol	Limit		Unit
		N-Channel	P-Channel	
Drain-Source Voltage	V _{DS}	20	-20	V
Gate-Source Voltage	V _{GS}	±12	±12	V
Continuous Drain Current ¹⁾	I _D	20	-17	A
Maximum Power Dissipation	P _D	5	5	W
Pulsed Drain Current ²⁾	I _{DM}	80	-68	A
Junction and Storage Temperature	T _J , T _{STG}	-55 to 150	-55 to 150	°C

Typical Thermal Resistance			
Parameter	Symbol	Limit	Unit
Junction-to-Ambient Thermal Resistance	R _{θJA}	65	°C/W

Note:
R_{θJA} is the sum of the junction-to-case and case-to-ambient thermal resistance where the case thermal reference is defined as the solder mounting surface of the drain pins mounted on a 1 inch FR-4 with 2oz. square pad of copper

Electrical Characteristics (T _A = 25°C UNLESS OTHERWISE NOTED)						
Characteristics	Symbol	Test Condition	Limits			Unit
			Min	Typ	Max	
N-Channel Static						
Drain-Source 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	0.62	1.00	V
Drain-Source On-State Resistance	R _{DS(on)}	V _{GS} =4.5V, I _D =20A	-	5.1	6.0	mΩ
		V _{GS} =2.5V, ID=20A	-	6.2	7.3	mΩ
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =20V, V _{GS} =0V	-	-	1.0	uA
Gate-Source Leakage Current	I _{GSS}	V _{GS} =±12V, V _{DS} =0V	-	-	± 100	nA
Drain-Source 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

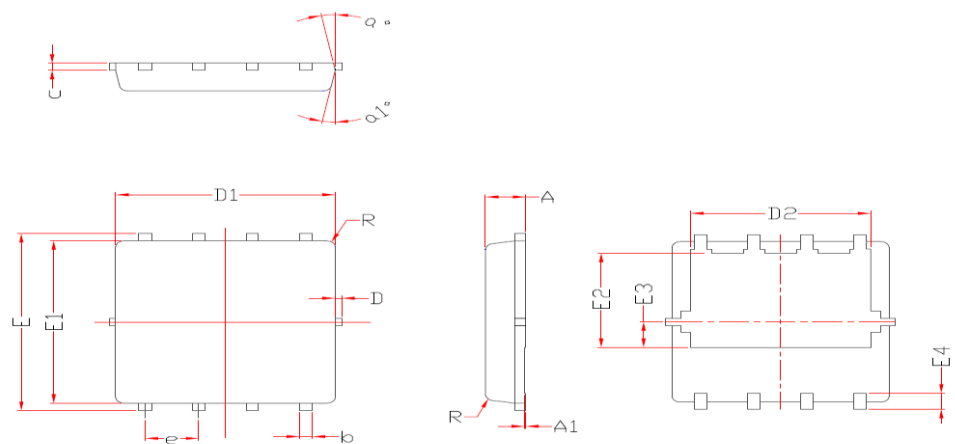
Electrical Characteristics (T _A = 25°C UNLESS OTHERWISE NOTED)						
Characteristics	Symbol	Test Condition	Limits			Unit
			Min	Typ	Max	
P-Channel Static						
Drain-Source Breakdown Voltage	B _{VDSS}	V _{GS} = 0V, I _D =-250uA	-20			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =-250uA	-0.50	-0.70	-1.00	V
Drain-Source On-State Resistance	R _{DS(on)}	V _{GS} =-4.5V, I _D =-17A	-	13	15	mΩ
		V _{GS} =-2.5V, ID=-16A	-	15	18	mΩ
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-20V, V _{GS} =0V	-	-	1.0	uA
Gate-Source Leakage Current	I _{GSS}	V _{GS} =±12V, V _{DS} =0V	-	-	±100	nA
Drain-Source 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 :

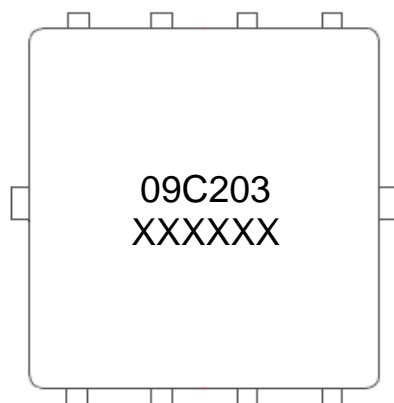
1. Pulse width<300us, Duty cycle<2%.
2. Essentially independent of operating temperature typical characteristics.
3. Repetitive rating, pulse width limited by junction temperature T_J(MAX)=150°C. Ratings are based on low frequency and duty cycles to keep initial T_J=25°C.
4. The maximum current rating is package limited.
5. RQJA is the sum of the junction to case and case to ambient 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

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