



DMN3033LSN

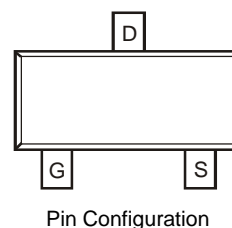
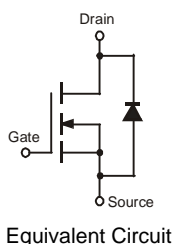
N-CHANNEL ENHANCEMENT MODE MOSFET

Features

- Low Gate Charge
- Low $R_{DS(ON)}$:
 - 30 mΩ @ $V_{GS} = 10V$
 - 40 mΩ @ $V_{GS} = 4.5V$
- Low Input/Output Leakage
- **Lead Free By Design/RoHS Compliant (Note 3)**
- **Qualified to AEC-Q101 Standards for High Reliability**
- **"Green" Device (Note 4)**

Mechanical Data

- Case: SC-59
- Case Material - Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish – Matte Tin annealed over Copper leadframe. Solderable per MIL-STD-202, Method 208
- Terminal Connections: See Diagram
- Weight: 0.014 grams (approximate)



Maximum Ratings @ $T_A = 25^\circ C$ unless otherwise specified

Characteristic	Symbol	Value	Unit
Drain-Source Voltage	V_{DSS}	30	V
Gate-Source Voltage	V_{GSS}	±20	V
Drain Current (Note 1) Continuous	I_D	$T_A = 25^\circ C$	6
		$T_A = 70^\circ C$	5
Pulsed Drain Current (Note 2)	I_{DM}	24	A
Body-Diode Continuous Current (Note 1)	I_S	2.25	A

Thermal Characteristics @ $T_A = 25^\circ C$ unless otherwise specified

Characteristic	Symbol	Value	Unit
Total Power Dissipation (Note 1)	P_D	1.4	W
Thermal Resistance, Junction to Ambient (Note 1) $t \leq 10s$	$R_{\theta JA}$	90	$^\circ C / W$
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	$^\circ C$

- Notes:
1. Device mounted on 1"x1", FR-4 PC board with 2 oz. Copper and test pulse width $t \leq 10s$.
 2. Repetitive Rating, pulse width limited by junction temperature.
 3. No purposefully added lead.



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Electrical Characteristics @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
STATIC PARAMETERS						
Drain-Source Breakdown Voltage	BV _{DSS}	30	—	—	V	I _D = 250μA, V _{GS} = 0V
Zero Gate Voltage Drain Current	I _{DSS}	—	—	1 5	μA	T _J = 25°C T _J = 55°C V _{DS} = 30V, V _{GS} = 0V
Gate-Body Leakage Current	I _{GSS}	—	—	±100	nA	V _{DS} = 0V, V _{GS} = ±20V
Gate Threshold Voltage	V _{GS(th)}	1.0	—	2.1	V	V _{DS} = V _{GS} , I _D = 250μA
Static Drain-Source On-Resistance (Note 5)	R _{DS(on)}	—	25 36	30 40	mΩ	V _{GS} = 10V, I _D = 6A V _{GS} = 4.5V, I _D = 5A
Forward Transconductance (Note 5)	g _{FS}	—	5	—	S	V _{DS} = 10V, I _D = 8A
Diode Forward Voltage (Note 5)	V _{SD}	—	0.7	1.1	V	I _S = 2.25A, V _{GS} = 0V
DYNAMIC PARAMETERS (Note 6)						
Total Gate Charge	Q _g	—	10.5	—	nC	V _{GS} = 5V, V _{DS} = 15V, I _D = 6A
Gate-Source Charge	Q _{gs}	—	3.8	—	nC	V _{GS} = 10V, V _{DS} = 15V, I _D = 6A
Gate-Drain Charge	Q _{gd}	—	2.9	—	nC	V _{GS} = 10V, V _{DS} = 15V, I _D = 6A
Turn-On Delay Time	t _{D(on)}	—	11	—	ns	V _{DD} = 15V, V _{GS} = 10V, R _D = 1.8Ω, R _G = 6Ω
Turn-On Rise Time	t _r	—	7	—	ns	
Turn-Off Delay Time	t _{D(off)}	—	63	—	ns	
Turn-Off Fall Time	t _f	—	30	—	ns	
Input Capacitance	C _{iss}	—	755	—	pF	V _{DS} = 10V, V _{GS} = 0V f = 1.0MHz
Output Capacitance	C _{oss}	—	136	—	pF	
Reverse Transfer Capacitance	C _{rss}	—	108	—	pF	

Notes: 4. Test pulse width t = 300ms.
5. Guaranteed by design. Not subject to production testing.