TY Semicondutor®

Product specification

DMN3300U

Features

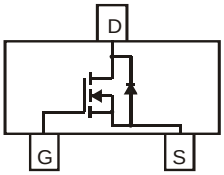
- Low On-Resistance
  - 150 mΩ @V_{GS} = 4.5V
  - 200 mΩ @V_{GS} = 2.5V
  - 240 mΩ @V_{GS} = 1.8V
  - 300 mΩ @V_{GS} = 1.5V
- Ultra Low Gate Threshold Voltage
- Low Input Capacitance
- Fast Switching Speed
- **Lead, Halogen and Antimony Free, RoHS Compliant "Green" Device**
- **Qualified to AEC-Q101 Standards for High Reliability**

Mechanical Data

- Case: SOT-23
- Case Material: Molded Plastic, “Green” Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020D
- Terminal Connections: See Diagram
- Terminals: Finish — Matte Tin annealed over Copper leadframe. Solderable per MIL-STD-202, Method 208
- Weight: 0.008 grams (approximate)

TOP VIEW

SOT-23



TOP VIEW
Internal Schematic

Maximum Ratings @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Value	Units
Drain-Source Voltage	V_{DSS}	30	V
Gate-Source Voltage	V_{GSS}	±12	V
Drain Current	I_D	2.0	A
Pulsed Drain Current	I_{DM}	8	A

Thermal Characteristics

Characteristic	Symbol	Value	Units
Total Power Dissipation	P_D	600	mW
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	208	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	°C

Electrical Characteristics @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV_{DSS}	30	37	—	V	V_{GS} = 0V, I_D = 100μA
Zero Gate Voltage Drain Current	I_{DSS}	—	—	1	μA	V_{DS} = 30V, V_{GS} = 0V
Gate-Source Leakage	I_{GSS}	—	—	±10	μA	V_{GS} = ±12V, V_{DS} = 0V
ON CHARACTERISTICS						
Gate Threshold Voltage	$V_{GS(th)}$	0.5	—	1	V	V_{DS} = V_{GS}, I_D = 250μA
Static Drain-Source On-Resistance	$R_{DS\ (ON)}$	—	100	150	mΩ	V_{GS} = 4.5V, I_D = 4.5A
			140	200		V_{GS} = 2.5V, I_D = 3.5A
			185	250		V_{GS} = 1.8V, I_D = 1.5A
			240	300		V_{GS} = 1.5V, I_D = 0.5A
Forward Transfer Admittance	$\|Y_{fs}\|$	—	5	—	S	V_{DS} =5V, I_D = 2.4A
Diode Forward Voltage	V_{SD}	—	0.8	1.1	V	V_{GS} = 0V, I = 0.5A
DYNAMIC CHARACTERISTICS						
Input Capacitance	C_{iss}	—	193	—	pF	V_{DS} = 10V, V_{GS} = 0V f = 1.0MHz
Output Capacitance	C_{oss}	—	35	—	pF	
Reverse Transfer Capacitance	C_{rss}	—	23	—	pF	
Turn-On Delay Time	$t_{d(on)}$	—	7	—	ns	V_{DD} = 10V, R_L = 10Ω I_D = 1A, V_{GEN} = 4.5V, R_G = 6Ω
Rise Time	t_r	—	24	—		
Turn-Off Delay Time	$t_{d(off)}$	—	24	—		
Fall Time	t_f	—	12	—		