

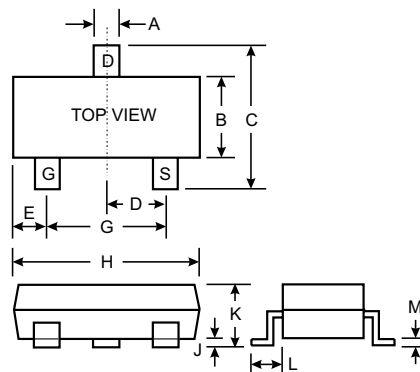
N-CHANNEL ENHANCEMENT MODE FIELD EFFECT TRANSISTOR

Features

- Extremely Low On-Resistance:
170mΩ @ $V_{GS} = 4.5V$
- High Drain Current: 1.1A
- Ideal for Notebook Computer, Portable Phone, PCMCIA Cards, and Battery Powered Circuits

Mechanical Data

- Case: SC-59, Molded Plastic
- Terminals: Solderable per MIL-STD-202, Method 208
- Terminal Connections: See Diagram
- Marking: 1111
- Weight: 0.008 grams (approx.)
- Mounting Position: Any



SC-59		
Dim	Min	Max
A	0.30	0.50
B	1.40	1.80
C	2.50	3.00
D	0.85	1.05
E	0.30	0.70
G	1.70	2.10
H	2.70	3.10
J	—	0.10
K	1.00	1.40
L	0.55	0.70
M	0.10	0.35
All Dimensions in mm		

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

Characteristic	Symbol	DMN100	Units
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	± 20	V
Drain Current	I_D	± 1.1 ± 4.0	A
Total Power Dissipation (Note 1)	P_d	500	mW
Thermal Resistance, Junction to Ambient (Note 1)	$R_{\theta JA}$	250	K/W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	$^\circ C$

- Notes:
- Valid provided that terminals are kept at ambient temperature.
 - Pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.

Electrical Characteristics @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
OFF CHARACTERISTICS (Notes 1 & 2)						
Drain-Source Breakdown Voltage	BV _{DSS}	30	—	—	V	V _{GS} = 0V, I _D = 250μA
Zero Gate Voltage Drain Current @ T _J = 25°C @ T _J = 125°C	I _{DSS}	—	—	1.0 10	μA	V _{DS} = 24V, V _{GS} = 0V
Gate-Body Leakage	I _{GSS}	—	—	± 100	nA	V _{GS} = ± 12V, V _{DS} = 0V
ON CHARACTERISTICS (Notes 1 & 2)						
Gate Threshold Voltage	V _{GS(th)}	1.0	—	3.0	V	V _{DS} = 10V, I _D = 1.0mA
Static Drain-Source On-Resistance	R _{DS (ON)}	—	—	0.170 0.240	Ω	V _{GS} = 4.5V, I _D = 0.5A V _{GS} = 10V, I _D = 1.0A
Forward Transconductance	g _{FS}	1.3	2.4	—	S	V _{DS} = 10V, I _D = 0.5A
DYNAMIC CHARACTERISTICS						
Input Capacitance	C _{iss}	—	150	—	pF	V _{DS} = 10V, V _{GS} = 0V f = 1.0MHz
Output Capacitance	C _{oss}	—	90	—	pF	
Reverse Transfer Capacitance	C _{rss}	—	30	—	pF	
Total Gate Change	Q _g	—	5.5	—	nC	V _{DS} = 24V, I _D = 1.0A, V _{GS} = 10V
Gate-to-Source Change	Q _{gs}	—	0.8	—	nC	
Gate-to-Drain Change	Q _{gd}	—	1.3	—	nC	
SWITCHING CHARACTERISTICS						
Turn-On Delay Time	t _{D(ON)}	—	10	—	ns	V _{DD} = 10V, I _D = 0.5A, V _{GS} = 5.0V, R _{GEN} = 50Ω
Turn-Off Delay Time	t _{D(OFF)}	—	25	—	ns	
Turn-On Rise Time	t _r	—	15	—	ns	
Turn-Off Fall Time	t _f	—	45	—	ns	
SOURCE- DRAIN RATINGS (BODY DIODE)						
Continuous Source Current	I _S	—	—	0.54	A	—
Pulse Source Current	I _{SM}	—	—	4.0	A	—
Forward Voltage	V _{SD}	—	—	1.2	V	I _F = 1.0A, V _{GS} = 0V
Reverse Recovery Time	t _{rr}	—	35	—	ns	I _F = 1.0A, di/dt = 50A/μs

Notes: 1. Valid provided that terminals are kept at ambient temperature.
2. Pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.

