

LMNNBSS139T Dual N-Channel Enhancement Mode MOSFET

Features

- 60V, 0.2A, $R_{DS(ON)} < 2.5\Omega @ V_{GS}=4.5V$
- Improved dv/dt Capability
- Fast Switching
- Green Device Available
- SOT-363 Package Design
- ESD Protected : 1500V

Product Description

These Dual N-Channel Enhancement Mode Power Field Effect Transistors are Using Trench

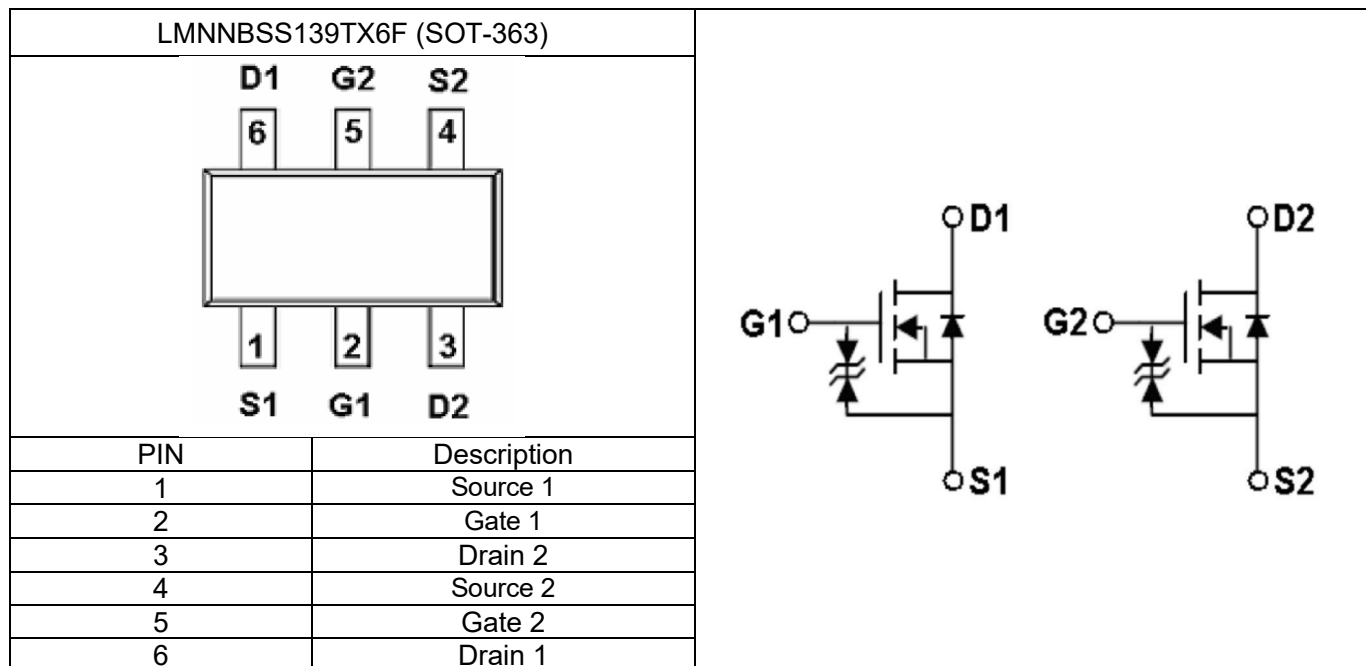
DMOS Technology. This Advanced Technology has been Especially Tailored to Minimize on-state Resistance, Provide Superior Switching Performance, and Withstand high Energy Pulse in the Avalanche and Commutation mode.

These Devices are well Suited for High Efficiency Fast Switching Applications.

Applications

- Notebook
- Load Switch
- LED Applications

Pin Configuration



Ordering Information

Ordering Information					
Part Number	P/N	PKG code	Pb Free code	Package	Quantity
LMNNBSS139TX6F	LMNNBSS139T	X6	F	SOT-363	3000PCS

Marking Information

Marking Information	
Part Number	LFC code
<u>J2</u>	<u>WM</u>

Absolute Maximum Ratings

(T_A=25°C Unless otherwise noted)

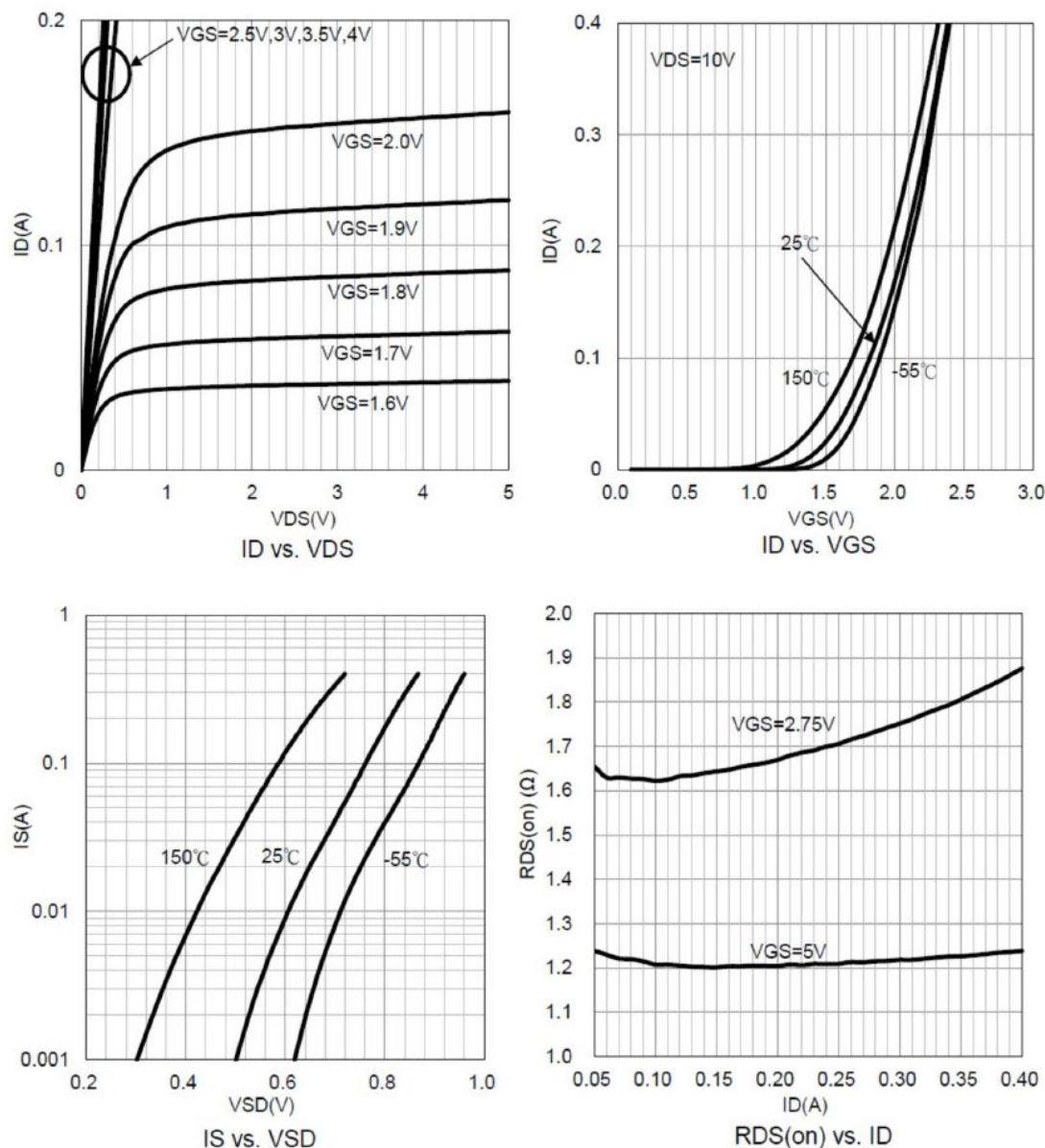
Symbol	Parameter		Typical	Unit
V _{DS}	Drain-Source Voltage		60	V
V _{GS}	Gate-Source Voltage		±20	V
I _D	Continuous Drain Current	T _A =25°C	0.2	A
I _{DM}	Pulsed Drain Current ¹		0.8	A
P _D	Power Dissipation	T _A =25°C	0.225	W
		(Derate above 25°C)	0.0018	
T _J	Operating Junction Temperature		-55 to +150	°C
T _{STG}	Storage Temperature Range		-55 to +150	°C
R _{θJA}	Thermal Resistance-Junction to Ambient		556	°C/W
TL	Maximum Lead Temperature for Soldering Purpose, for 10 Seconds		260	°C

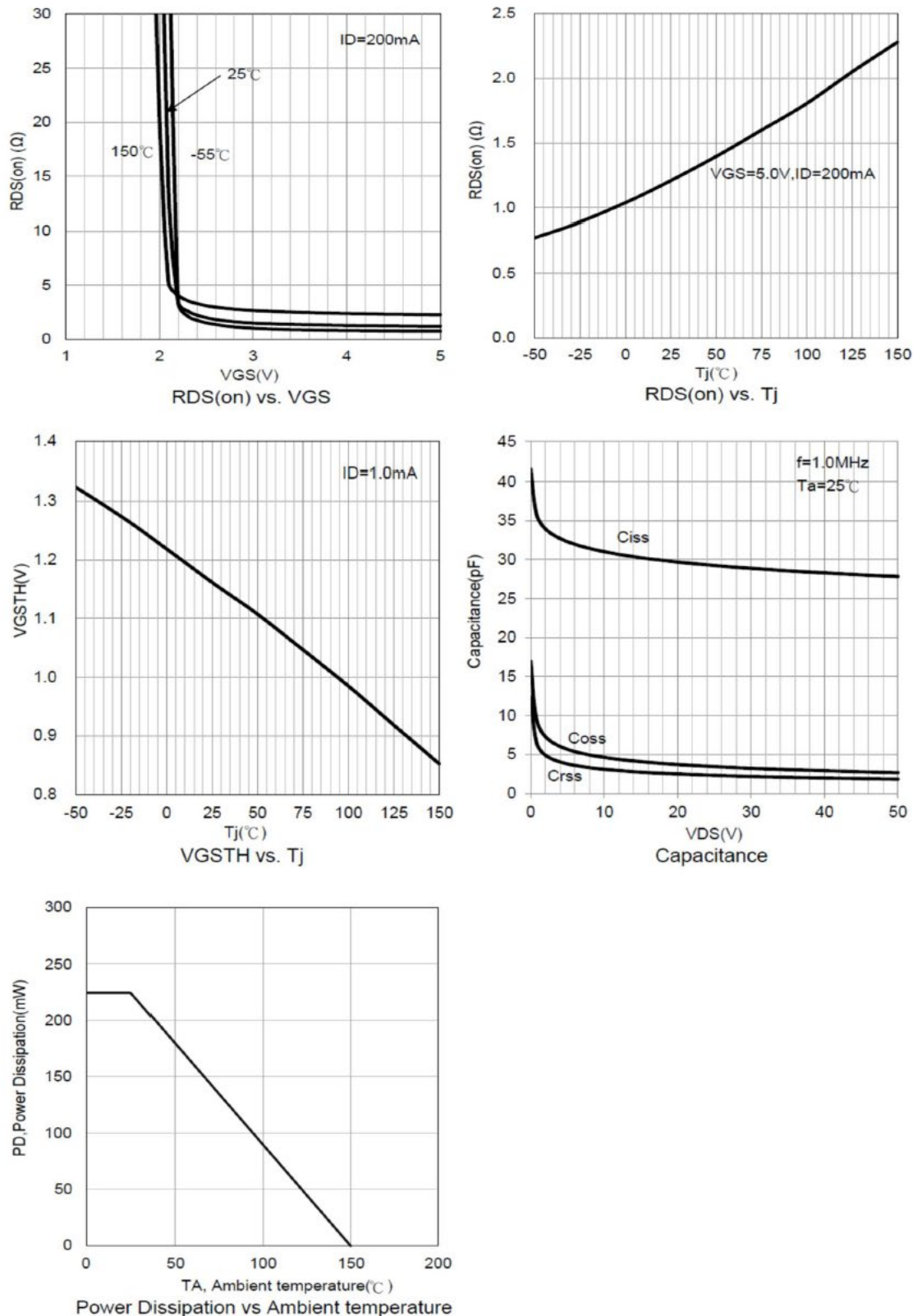
Electrical Characteristics

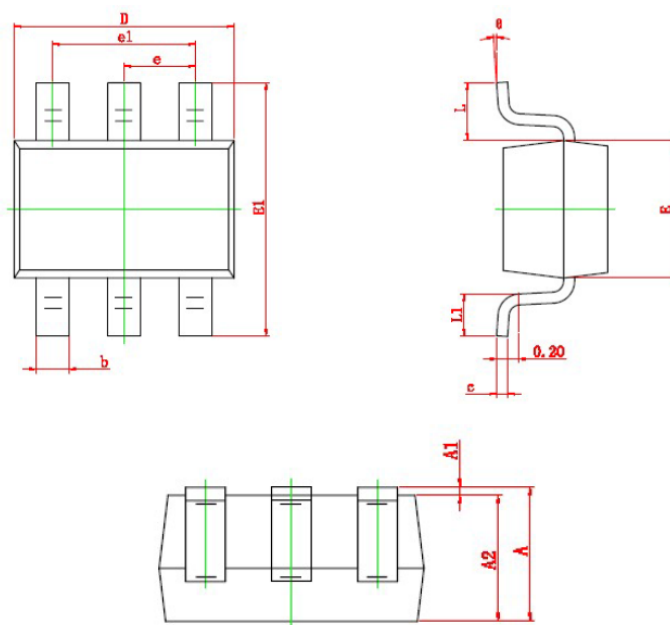
(T_C=25°C Unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
Static characteristics						
V _{(BR)DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =250uA	60			V
V _{GS (th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =250uA	0.8		1.5	V
I _{GSSF}	Gate Leakage Current, Forward	V _{DS} =0V, V _{GS} =20V			10	uA
I _{GSSR}	Gate Leakage Current, Reverse	V _{DS} =0V, V _{GS} =-20V			-10	uA
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =25V, V _{GS} =0V			0.1	uA
		V _{DS} =50V, V _{GS} =0V			0.5	
R _{DS(on)}	Drain-Source On-Resistance	V _{GS} =4.5V, I _D =200mA			2.5	Ω
		V _{GS} =2.5V, I _D =100mA			4	
g _{FS}	Forward Transconductance ¹	V _{DS} =25V, I _D =0.2A	100			mS
Dynamic						
Q _g	Total Gate Charge	V _{DS} =25V, V _{GS} =4.5V, I _D =0.2A		0.6		nC
Q _{gs}	Gate-Source Charge			0.22		
Q _{gd}	Gate-Drain Charge			0.2		
C _{iss}	Input Capacitance	V _{DS} =25V, V _{GS} =0V, f=1.0MHz		28.8		pF
C _{oss}	Output Capacitance			3.8		
C _{rss}	Reverse Transfer Capacitance			2.9		
t _{d(on)}	Turn-On Time	V _{DS} =25V, V _{GS} =10V, R _G =25Ω, I _D =0.2A		3.8		ns
t _r				7.5		
t _{d(off)}	Turn-Off Time			19		
t _f				15		

Typical Performance Characteristics



Typical Performance Characteristics(continue)


Package Dimension:
SOT-363


Dimensions				
Symbol	Millimeters		Inches	
	Min	Max	Min	Max
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.150	0.350	0.006	0.014
c	0.080	0.150	0.003	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.150	2.450	0.085	0.096
e	0.650 TYP		0.026 TYP	
e1	1.200	1.400	0.047	0.055
L	0.525 TYP		0.021 TYP	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°

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