MSE20N06N
Dual N-Channel 20-V (D-S) MOSFET

FEATURES

- Low RDS(on) trench technology
- Low thermal impedance
- Fast switching speed

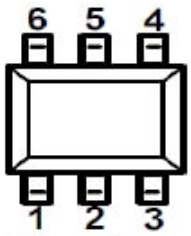
Typical Applications:

•Battery Powered Instruments

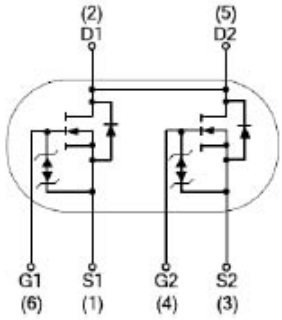
•Portable Computing

•Mobile Phones

•GPS Units and Media Players



Top view
SOT-26



ESD Protected

RoHS COMPLIANT
HALOGEN FREE

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C UNLESS OTHERWISE NOTED)				
Parameter		**Symbol**	**Limit**	**Units**
Drain-Source Voltage		V_{DS}	20	V
Gate-Source Voltage		V_{GS}	±8	
Continuous Drain Current [a]	T_A=25°C	I_D	6	A
	T_A=100°C		3.6	
Pulsed Drain Current [b]		I_{DM}	22	
Continuous Source Current (Diode Conduction) [a]		I_S	1	A
Power Dissipation [a]	T_A=25°C	P_D	0.83	W
	T_A=100°C		0.3	
Operating Junction and Storage Temperature Range		T_J, T_{stg}	-55 to 150	°C

THERMAL RESISTANCE RATINGS				
Parameter		**Symbol**	**Maximum**	**Units**
Maximum Junction-to-Ambient [a]	t <= 10 sec	$R_{\theta JA}$	110	°C/W
	Steady State		150	

Notes

a. Surface Mounted on 1” x 1” FR4 Board.

b. Pulse width limited by maximum junction temperature

Electrical Characteristics

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Static						
Gate-Source Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, ID = 250 uA	20			V
Gate-Body Leakage	I_{GSS}	V_{DS} = 0 V, V_{GS} = ±8 V			±10	uA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = 16 V, V_{GS} = 0 V			1	uA
		V_{DS} = 16 V, V_{GS} = 0 V, T_J = 85°C			30	
On-State Drain Current	$I_{D(on)}$	V_{DS} = 5 V, V_{GS} = 4.5 V	10			A
Drain-Source On-Resistance	$r_{DS(on)}$	V_{GS} = 4.5 V, I_D = 6 A			20	mΩ
		V_{GS} = 2.5 V, I_D = 5 A			28	
Forward Transconductance	g_{fs}	V_{DS} = 15 V, I_D = 6 A		10		S
Diode Forward Voltage	V_{SD}	I_S = 1.0 A, V_{GS} = 0 V		0.7		V
Dynamic						
Total Gate Charge	Q_g	V_{DS} = 10 V, V_{GS} = 4.5 V, I_D = 6 A		13.5		nC
Gate-Source Charge	Q_{gs}			0.9		
Gate-Drain Charge	Q_{gd}			5.4		
Turn-On Delay Time	$t_{d(on)}$	V_{DD} = 10 V, R_L = 10 Ω , I_D = 1 A, V_{GEN} = 4.5 V, R_{GEN} = 6 Ω		6		ns
Rise Time	t_r			12		
Turn-Off Delay Time	$t_{d(off)}$			65		
Fall Time	t_f			35		
Input Capacitance	C_{iss}	V_{DS} = 10 V, V_{GS} = 0 V, f =1 MHz		680		pF
Output Capacitance	C_{oss}			144		
Reverse Transfer Capacitance	C_{rss}			137		

Notes

a. Pulse test: PW <= 300us duty cycle <= 2%.

b. Guaranteed by design, not subject to production testing.

- **Characteristic Curves**