

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

Key Features:

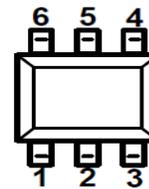
- Low $r_{DS(on)}$ trench technology
- Low thermal impedance
- Fast switching speed

Typical Applications:

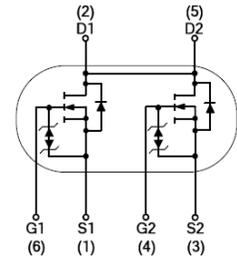
- Battery Powered Instruments
- Portable Computing
- Mobile Phones
- GPS Units and Media Players



RoHS
COMPLIANT
HALOGEN
FREE



Top view
SOT-26



PRODUCT SUMMARY		
V_{DS} (V)	$r_{DS(on)}$ (m Ω)	I_D (A)
20	20 @ $V_{GS} = 4.5V$	6
	28 @ $V_{GS} = 2.5V$	5

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

THERMAL RESISTANCE RATINGS				
Parameter		Symbol	Maximum	Units
Maximum Junction-to-Ambient ^a	$t \leq 10$ sec	$R_{\theta JA}$	110	$^\circ C/W$
	Steady State		150	

Notes

- Surface Mounted on 1" x 1" FR4 Board.
- Pulse width limited by maximum junction temperature

Electrical Characteristics

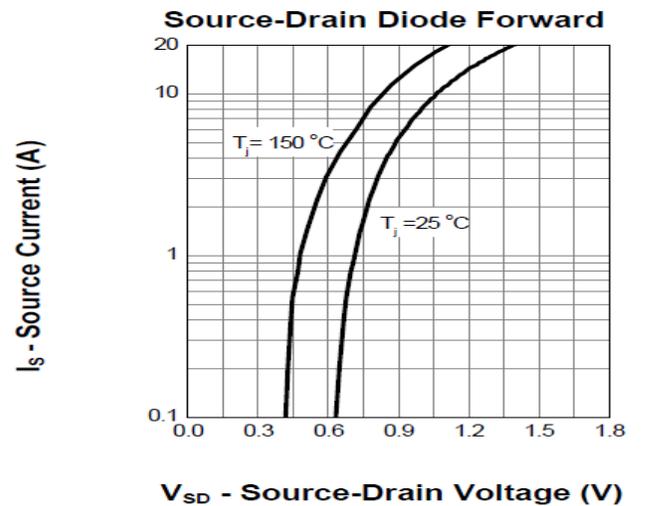
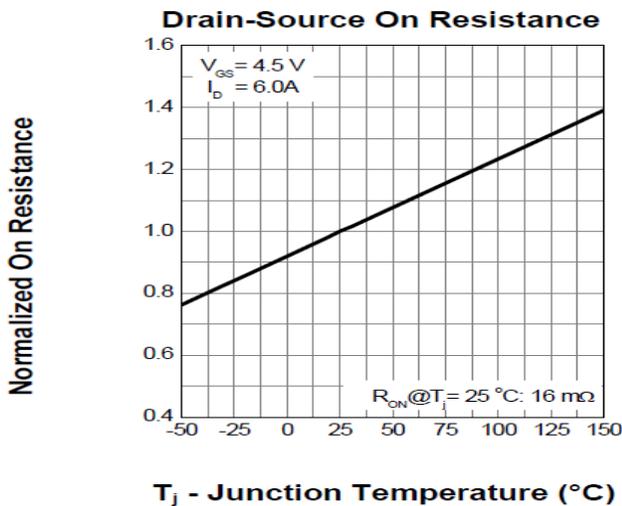
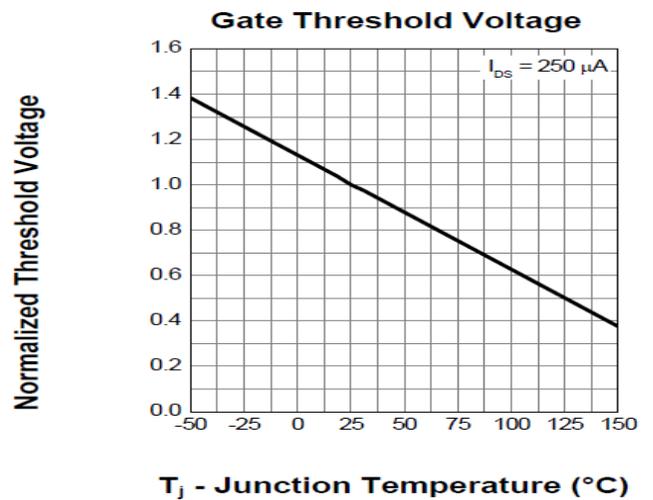
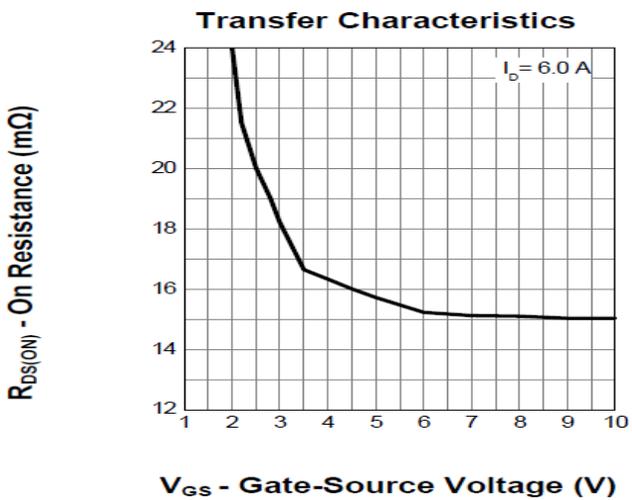
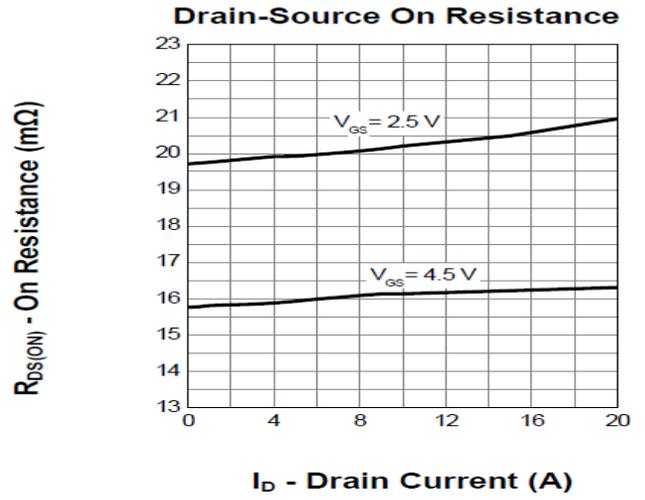
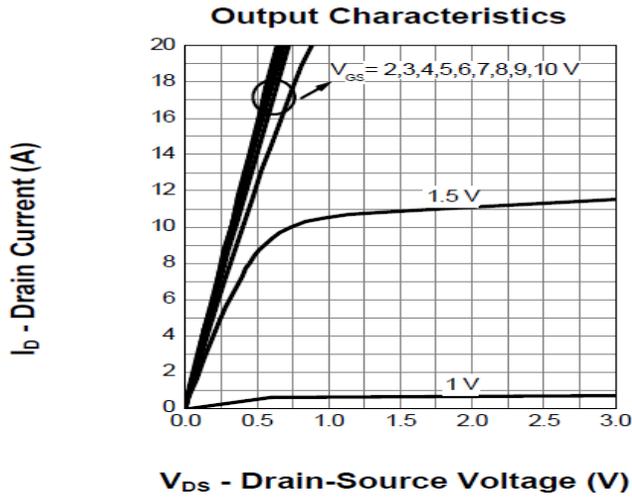
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Static						
Gate-Source Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250 \mu A$	20			V
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0 V, V_{GS} = \pm 8 V$			± 10	μA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 16 V, V_{GS} = 0 V$			1	μA
		$V_{DS} = 16 V, V_{GS} = 0 V, T_J = 85^\circ C$			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	m Ω
		$V_{GS} = 2.5 V, I_D = 5 A$			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	$t_{d(on)}$	$V_{DD} = 10 V, R_L = 10 \Omega, I_D = 1 A,$ $V_{GEN} = 4.5 V, R_{GEN} = 6 \Omega$		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

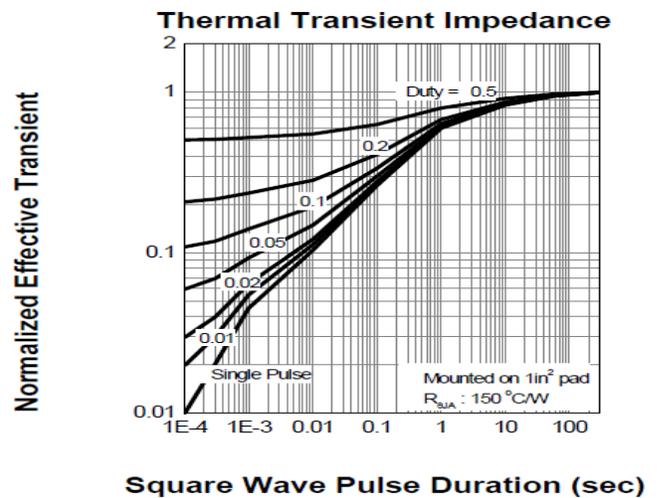
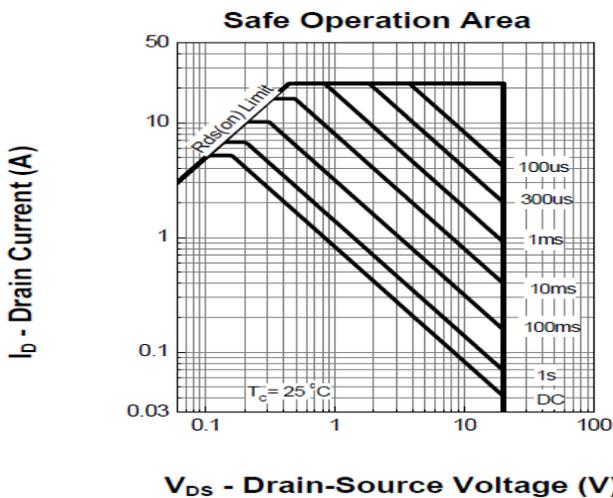
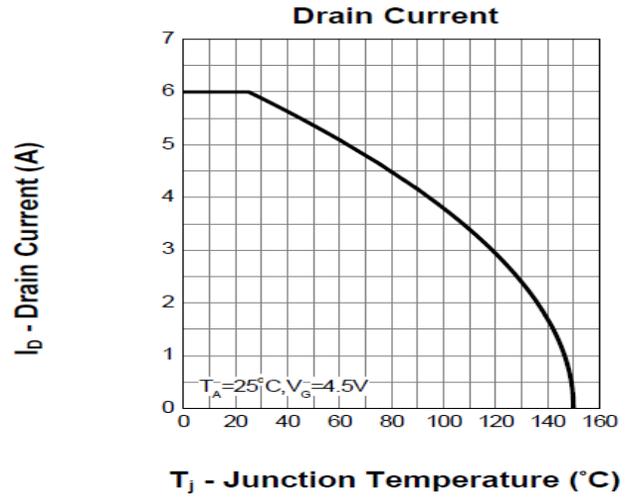
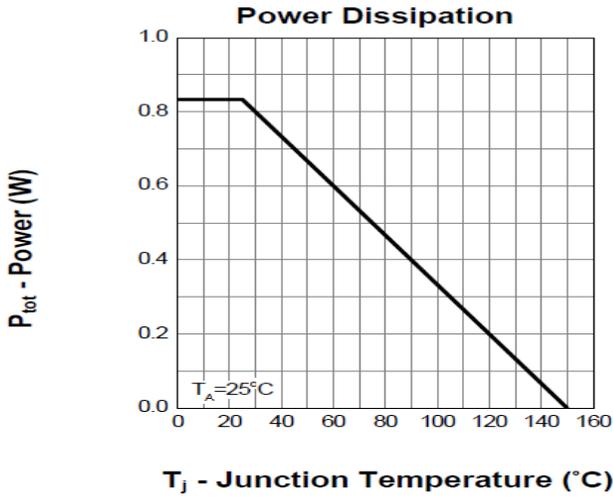
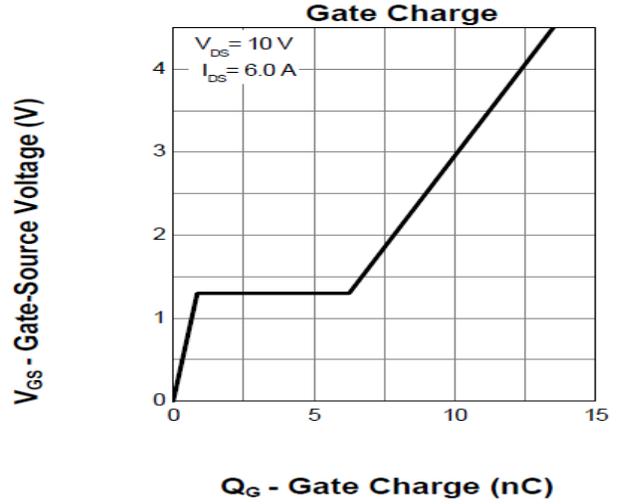
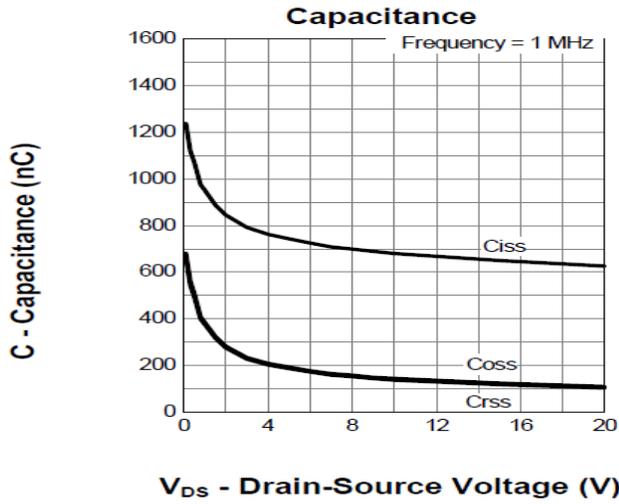
- Pulse test: PW \leq 300us duty cycle \leq 2%.
- Guaranteed by design, not subject to production testing.

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Typical Electrical Characteristics

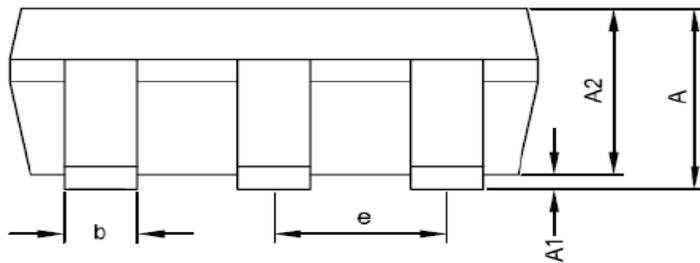
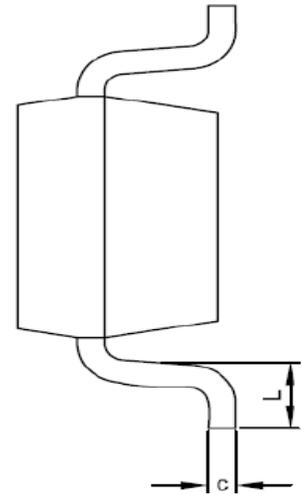
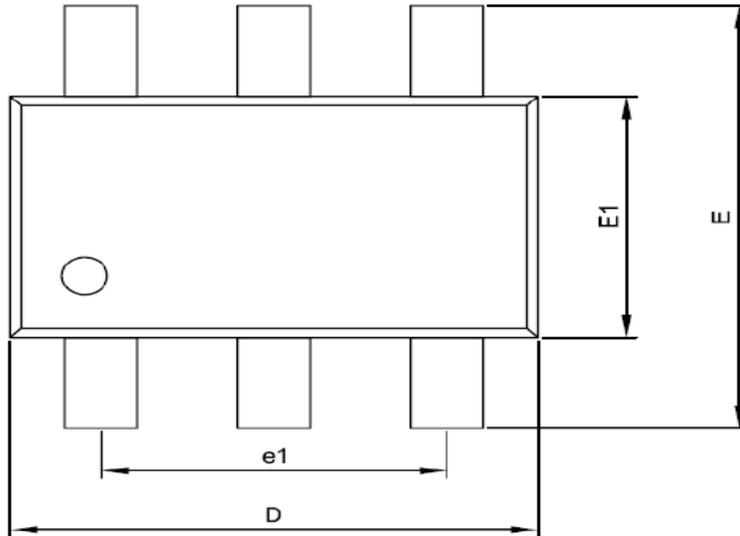


Typical Electrical Characteristics



Package Information

SOT- 26



Symbol	Dimensions In Millimeters	
	MIN.	MAX.
A	---	1.45
A1	---	0.15
A2	0.9	1.3
D	2.90 BSC	
E	2.890 BSC	
E1	1.5	1.7
c	0.08	0.25
b	0.3	0.5
e	0.95BSC	
e1	1.90BSC	
L	0.3	0.6