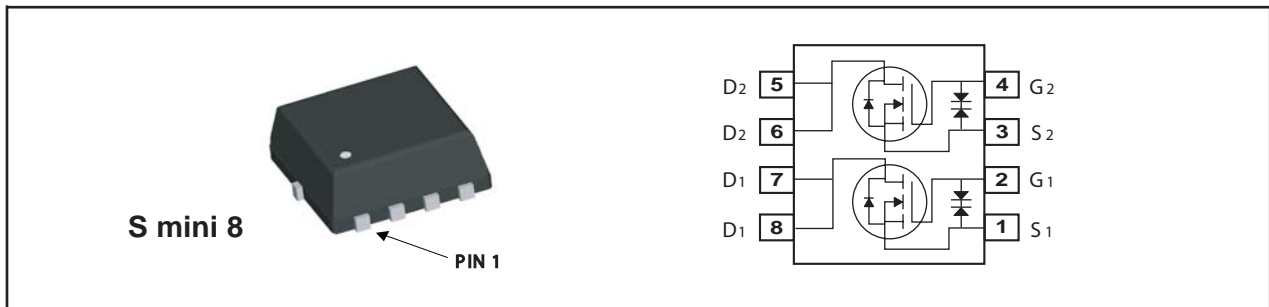


**Dual N-Channel Enhancement Mode Field Effect Transistor****PRODUCT SUMMARY**

V <sub>DSS</sub>	I <sub>D</sub>	R <sub>DS(ON)</sub> (mΩ) Max
20V	8A	12.5 @ V <sub>GS</sub> =4.5V
		13.5 @ V <sub>GS</sub> =4.0V
		14.0 @ V <sub>GS</sub> =3.7V
		15.0 @ V <sub>GS</sub> =3.1V
		18.0 @ V <sub>GS</sub> =2.5V

**FEATURES**

- Super high dense cell design for low R<sub>DS(ON)</sub>.
- Rugged and reliable.
- Surface Mount Package.
- ESD Protected.

**ABSOLUTE MAXIMUM RATINGS (T<sub>A</sub>=25°C unless otherwise noted)**

Symbol	Parameter	Limit	Units
V <sub>DS</sub>	Drain-Source Voltage	20	V
V <sub>GS</sub>	Gate-Source Voltage	±12	V
I <sub>D</sub>	Drain Current-Continuous <sup>b</sup>	T <sub>A</sub> =25°C	8
		T <sub>A</sub> =70°C	6.4
I <sub>DM</sub>	-Pulsed <sup>a b</sup>	48	A
P <sub>D</sub>	Maximum Power Dissipation	T <sub>A</sub> =25°C	1.32
		T <sub>A</sub> =70°C	0.84
T <sub>J</sub> , T <sub>STG</sub>	Operating Junction and Storage Temperature Range	-55 to 150	°C

**THERMAL CHARACTERISTICS**

Symbol	Parameter	Limit	Units
R <sub>θJA</sub>	Thermal Resistance, Junction-to-Ambient	95	°C/W

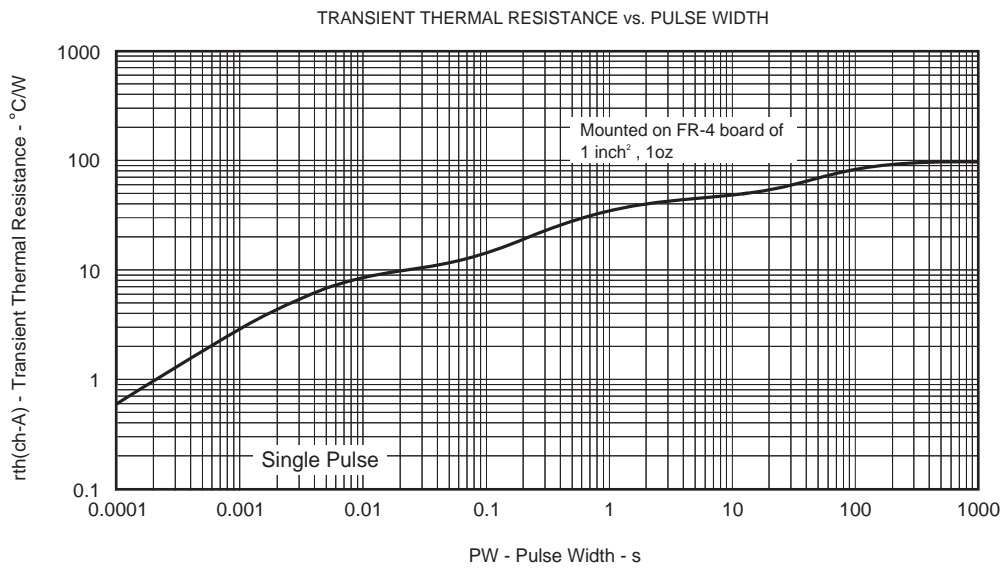
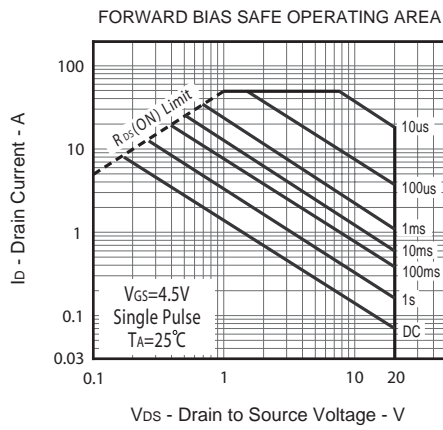
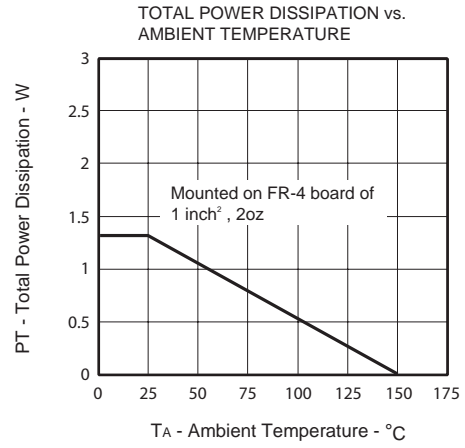
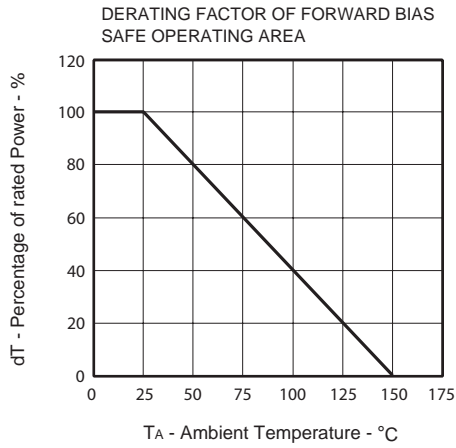
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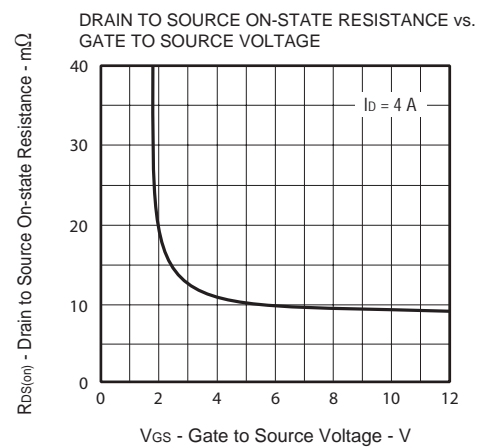
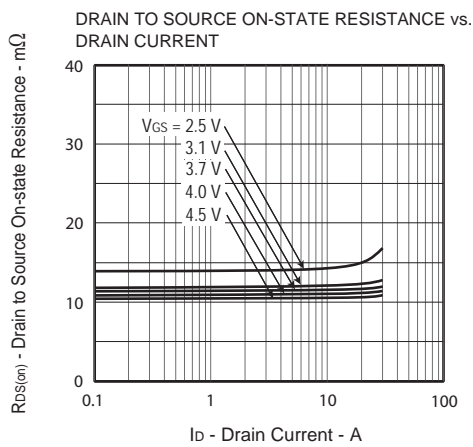
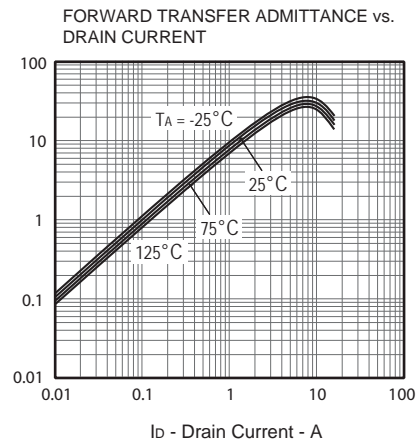
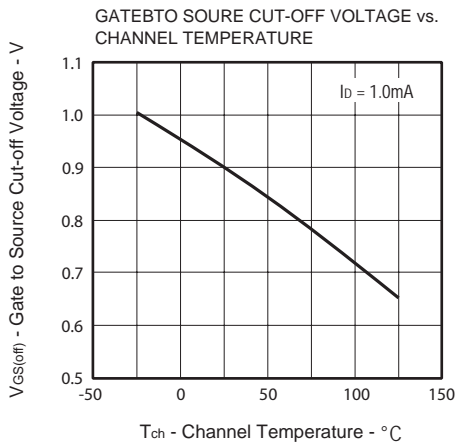
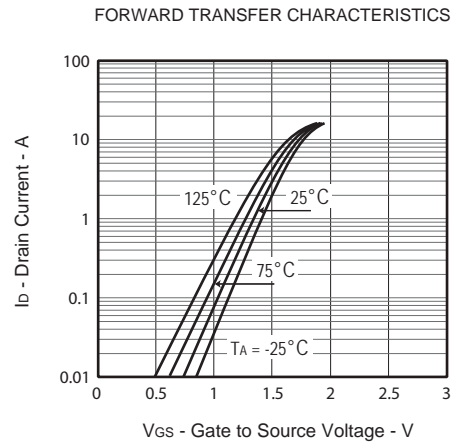
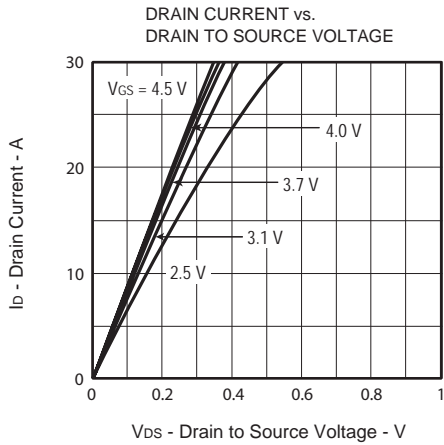
Ver 2.0

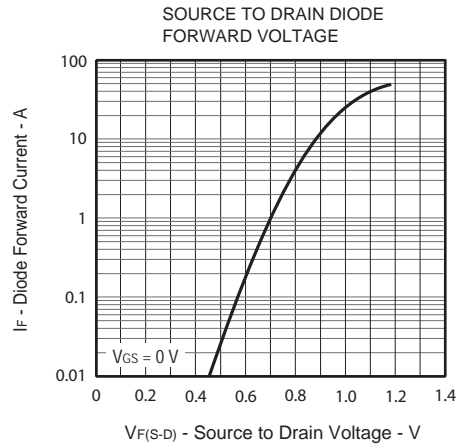
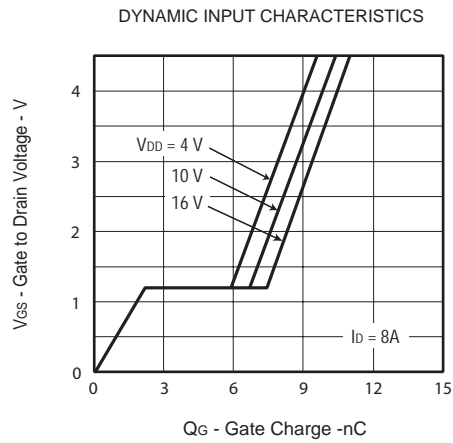
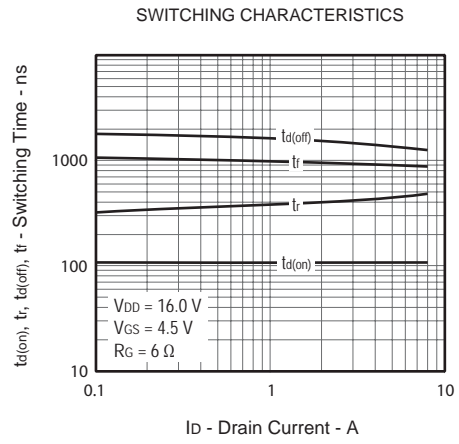
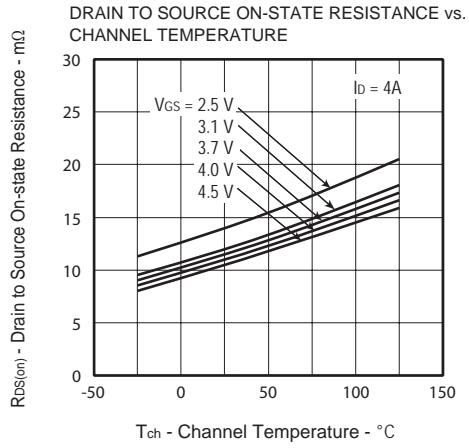
## ELECTRICAL CHARACTERISTICS (T<sub>A</sub>=25°C unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Units
<b>OFF CHARACTERISTICS</b>						
BV <sub>DSS</sub>	Drain-Source Breakdown Voltage	V <sub>GS</sub> =0V , I <sub>D</sub> =250uA	20			V
I <sub>DSS</sub>	Zero Gate Voltage Drain Current	V <sub>DS</sub> =16V , V <sub>GS</sub> =0V			1	uA
I <sub>GSS</sub>	Gate-Body Leakage Current	V <sub>GS</sub> = ±8V , V <sub>DS</sub> =0V			±1	uA
<b>ON CHARACTERISTICS</b>						
V <sub>GS(th)</sub>	Gate Threshold Voltage	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =1mA	0.5	0.9	1.5	V
R <sub>DS(ON)</sub>	Drain-Source On-State Resistance	V <sub>GS</sub> =4.5V , I <sub>D</sub> =4A	8.5	10.5	12.5	m ohm
		V <sub>GS</sub> =4.0V , I <sub>D</sub> =4A	9.0	11.0	13.5	m ohm
		V <sub>GS</sub> =3.7V , I <sub>D</sub> =4A	9.5	11.5	14.0	m ohm
		V <sub>GS</sub> =3.1V , I <sub>D</sub> =4A	10.0	12.0	15.0	m ohm
		V <sub>GS</sub> =2.5V , I <sub>D</sub> =2A	11.0	14.0	18.0	m ohm
g <sub>FS</sub>	Forward Transconductance	V <sub>DS</sub> =5V , I <sub>D</sub> =4A		23		S
<b>SWITCHING CHARACTERISTICS</b>						
t <sub>D(ON)</sub>	Turn-On Delay Time	V <sub>DD</sub> =16V I <sub>D</sub> =4A		110		ns
t <sub>r</sub>	Rise Time			406		ns
t <sub>D(OFF)</sub>	Turn-Off Delay Time	V <sub>GS</sub> =4.5V R <sub>GEN</sub> =6 ohm		1338		ns
t <sub>f</sub>	Fall Time			917		ns
Q <sub>g</sub>	Total Gate Charge	V <sub>DS</sub> =16V, I <sub>D</sub> =8A, V <sub>GS</sub> =4.5V		11		nC
Q <sub>gs</sub>	Gate-Source Charge	V <sub>DS</sub> =16V, I <sub>D</sub> =8A, V <sub>GS</sub> =4.5V		2.2		nC
Q <sub>gd</sub>	Gate-Drain Charge			5.2		nC
<b>DRAIN-SOURCE DIODE CHARACTERISTICS AND MAXIMUM RATINGS</b>						
V <sub>SD</sub>	Diode Forward Voltage	V <sub>GS</sub> =0V, I <sub>S</sub> =8A		0.86	1.2	V
<b>Notes</b> a. Pulse Test: Pulse Width ≤ 10us, Duty Cycle ≤ 1%. b. Drain current limited by maximum junction temperature. c. Mounted on FR4 Board of 1 inch <sup>2</sup> , 2oz.						

Jan,09,2015

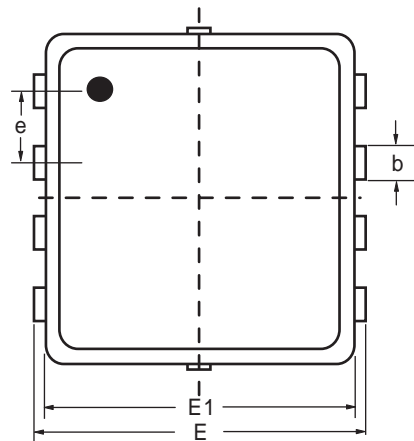




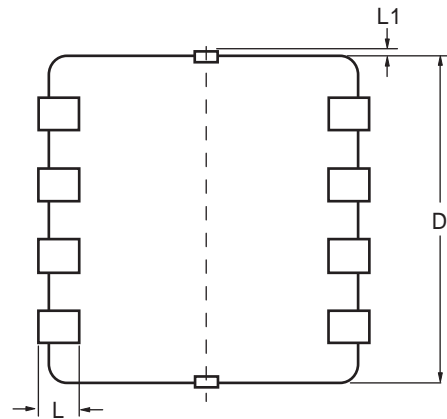


## PACKAGE OUTLINE DIMENSIONS

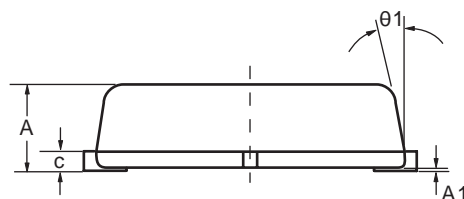
**S mini 8**



TOP VIEW



BOTTOM VIEW



SIDE VIEW

SYMBOLS	MILLIMETERS		
	MIN	NOM	MAX
A	0.700	0.800	0.900
A1	0.000	—	0.050
b	0.240	0.300	0.350
c	0.080	0.152	0.250
D	2.800	2.900	3.000
E	2.700	2.800	2.900
E1	2.200	2.300	2.400
e	0.650 BSC		
L	0.200	0.375	0.450
L1	0.000	—	0.100
θ1	0°	10°	12°

## TOP MARKING DEFINITION

