

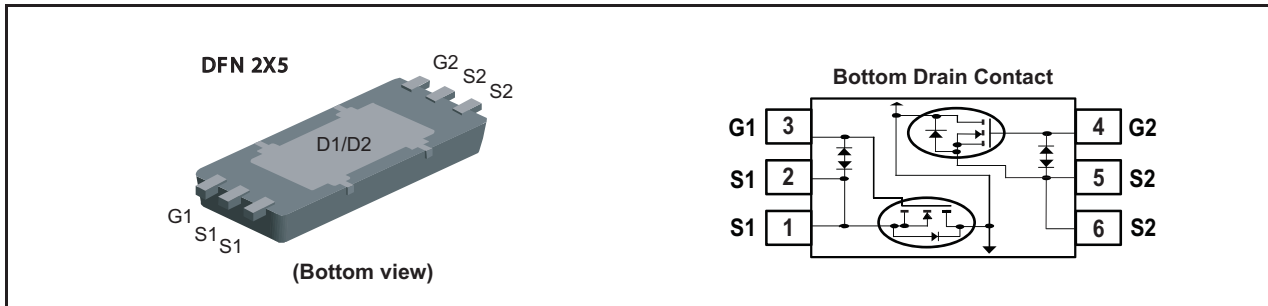


## Dual N-Channel Enhancement Mode Field Effect Transistor

PRODUCT SUMMARY		
VDSS	ID	RDS(ON) (mΩ) Max
20V	10A	8.3 @ VGS=4.5V
		8.6 @ VGS=3.9V
		9.0 @ VGS=3.5V
		10.0 @ VGS=3.1V
		12.5 @ VGS=2.5V

### FEATURES

- Super high dense cell design for low RDS(ON).
- Rugged and reliable.
- Surface Mount Package.
- ESD Protected.



### ABSOLUTE MAXIMUM RATINGS (TA=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>c</sup>	T <sub>A</sub> =25°C	10
		T <sub>A</sub> =70°C	8
I <sub>DM</sub>	-Pulsed <sup>a,c</sup>	85	A
P <sub>D</sub>	Maximum Power Dissipation	T <sub>A</sub> =25°C	1.7
		T <sub>A</sub> =70°C	1
T <sub>J</sub> , T <sub>STG</sub>	Operating Junction and Storage Temperature Range	-55 to 150	°C

### THERMAL CHARACTERISTICS

R <sub>θJA</sub>	Thermal Resistance, Junction-to-Ambient	75	°C/W
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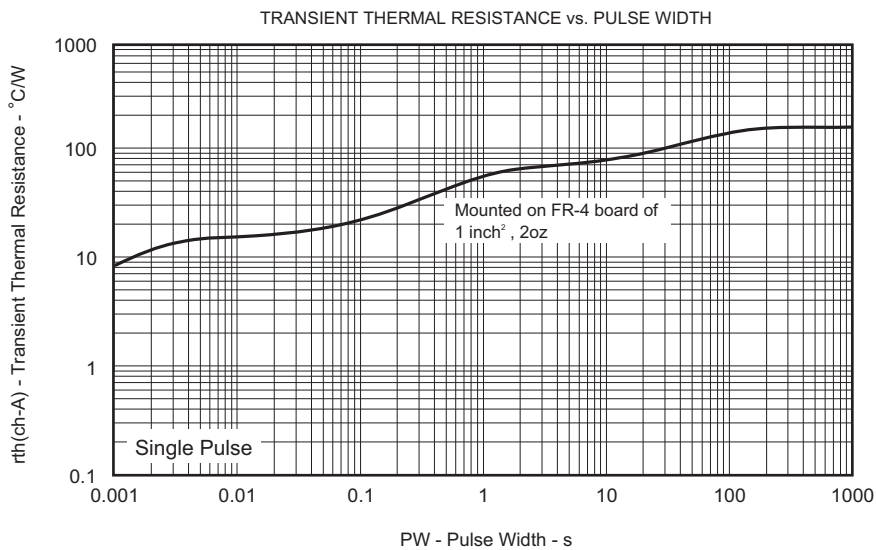
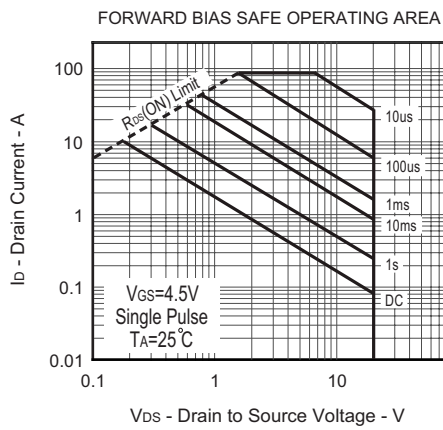
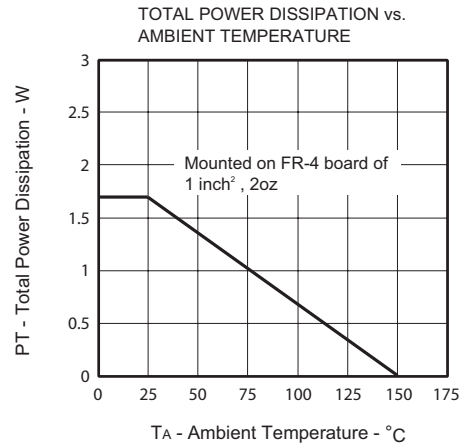
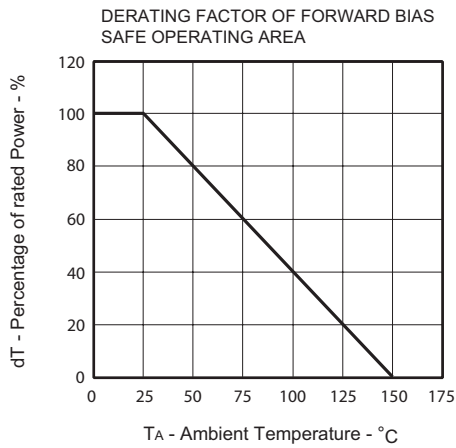
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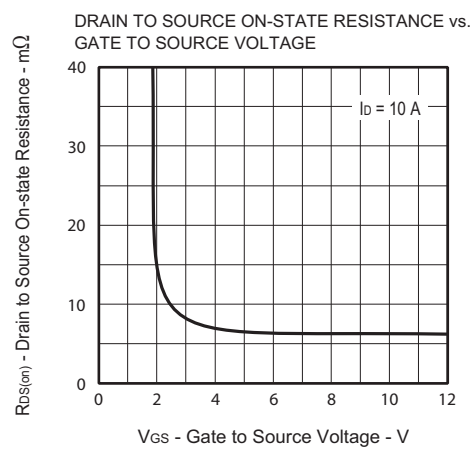
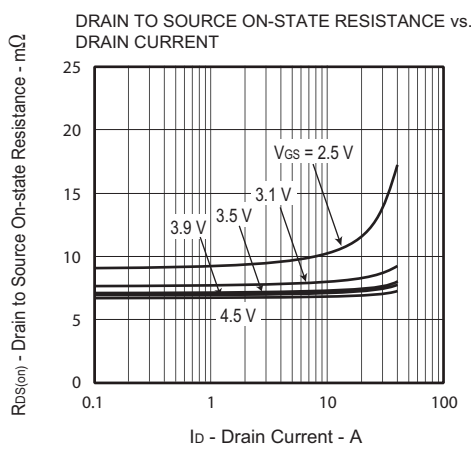
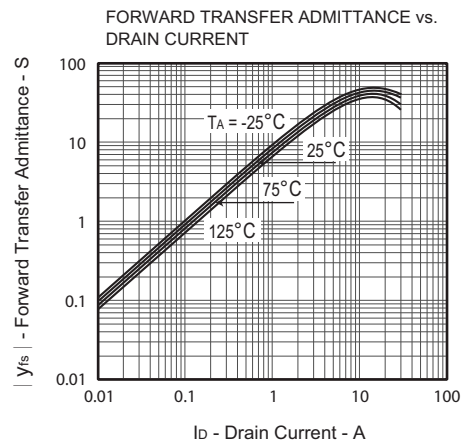
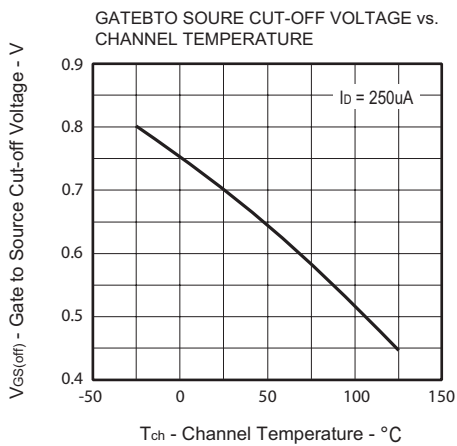
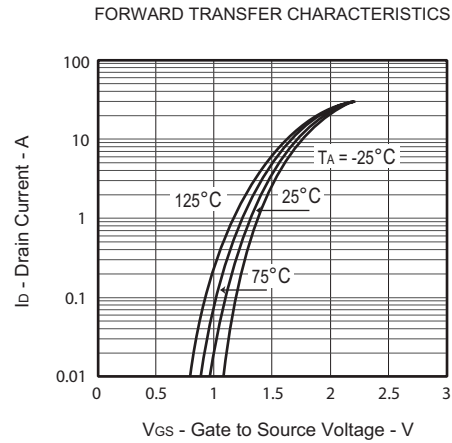
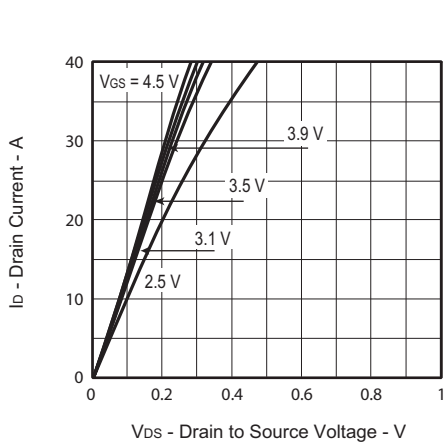
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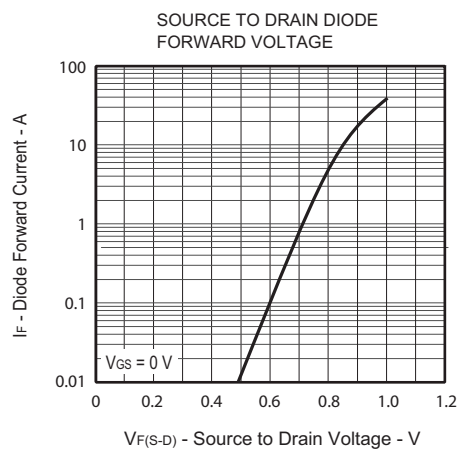
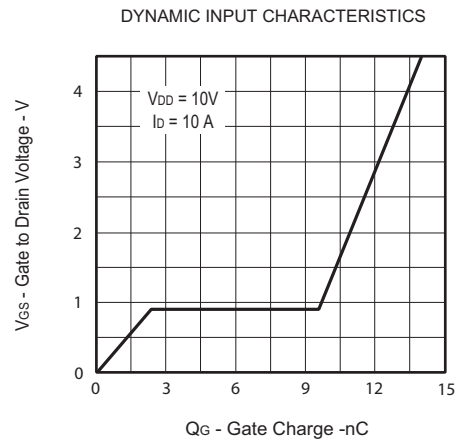
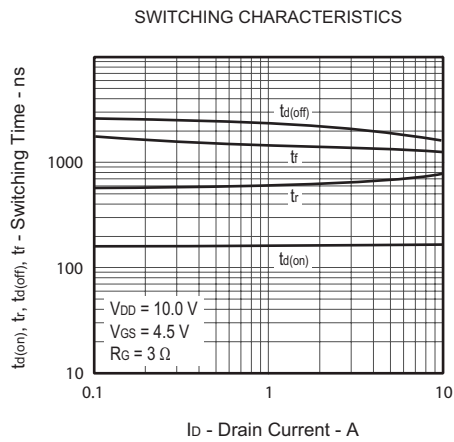
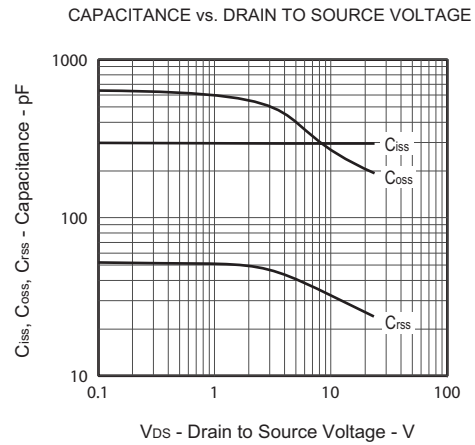
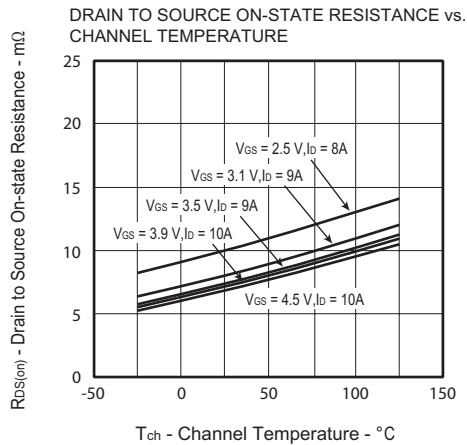
## ELECTRICAL CHARACTERISTICS (TA=25°C unless otherwise noted)

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> =20V , V <sub>GS</sub> =0V			1	uA
I <sub>GSS</sub>	Gate-Body Leakage Current	V <sub>GS</sub> = ±10V , V <sub>DS</sub> =0V			±10	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> =250uA	0.4	0.7	1.2	V
R <sub>DS(ON)</sub>	Drain-Source On-State Resistance	V <sub>GS</sub> =4.5V , I <sub>D</sub> =10A	5.2	6.8	8.3	m ohm
		V <sub>GS</sub> =3.9V , I <sub>D</sub> =10A	5.5	7.1	8.6	m ohm
		V <sub>GS</sub> =3.5V , I <sub>D</sub> =9A	6.0	7.3	9.0	m ohm
		V <sub>GS</sub> =3.1V , I <sub>D</sub> =9A	6.5	8.0	10.0	m ohm
		V <sub>GS</sub> =2.5V , I <sub>D</sub> =8A	7.5	10.0	12.5	m ohm
g <sub>FS</sub>	Forward Transconductance	V <sub>DS</sub> =5V , I <sub>D</sub> =10A		22		S
<b>DYNAMIC CHARACTERISTICS<sup>b</sup></b>						
C <sub>iss</sub>	Input Capacitance	V <sub>DS</sub> =10V, V <sub>GS</sub> =0V f=1.0MHz		290		pF
C <sub>oss</sub>	Output Capacitance			246		pF
C <sub>rss</sub>	Reverse Transfer Capacitance			31		pF
<b>SWITCHING CHARACTERISTICS<sup>b</sup></b>						
t <sub>D(ON)</sub>	Turn-On Delay Time	V <sub>DD</sub> =10V I <sub>D</sub> =10A V <sub>GS</sub> =4.5V R <sub>GEN</sub> = 3 ohm		147		ns
t <sub>r</sub>	Rise Time			680		ns
t <sub>D(OFF)</sub>	Turn-Off Delay Time			1872		ns
t <sub>f</sub>	Fall Time			1260		ns
Q <sub>g</sub>	Total Gate Charge			14.0		nC
Q <sub>gs</sub>	Gate-Source Charge	V <sub>DS</sub> =10V, I <sub>D</sub> =10A, V <sub>GS</sub> =4.5V		2.4		nC
Q <sub>gd</sub>	Gate-Drain Charge			7.2		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> =1A		0.72	1.2	V
<b>Notes</b>						
a. Pulse Test: Pulse Width ≤ 10us, Duty Cycle ≤ 1%.						
b. Guaranteed by design, not subject to production testing.						
c. Drain current limited by maximum junction temperature.						
d. Mounted on FR4 Board of 1 inch <sup>2</sup> , 2oz.						

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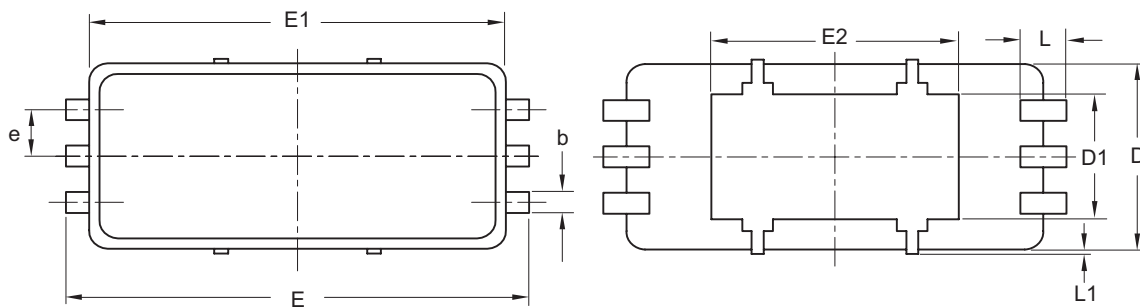






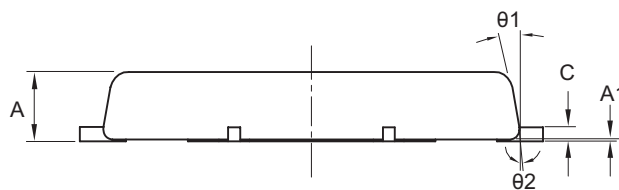
## PACKAGE OUTLINE DIMENSIONS

### DFN 2x5-6L



TOP VIEW

BOTTOM VIEW



SIDE VIEW

SYMBOLS	MILLIMETERS		
	MIN	NOM	MAX
A	0.70	0.75	0.80
A1	0.00	—	0.05
b	0.20	0.225	0.30
C	0.10	0.152	0.20
D	2.00 BSC		
D1	1.30	1.35	1.55
E	5.00 BSC		
E1	4.50 BSC		
E2	2.60	2.67	2.95
e	0.50 BSC		
L	0.40	0.50	0.60
L1	0.00	—	0.10
θ1	0°	10°	12°
θ2	3° BSC		

## TOP MARKING DEFINITION

