

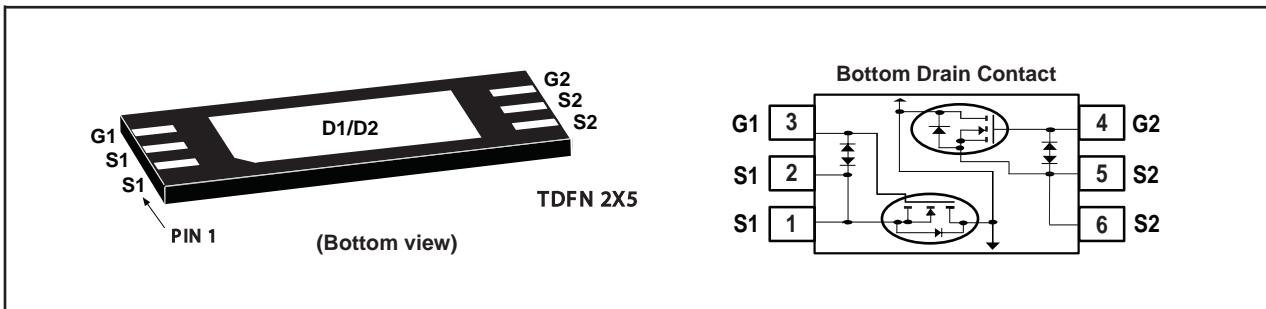


Dual N-Channel Enhancement Mode Field Effect Transistor

PRODUCT SUMMARY		
V _{DSS}	I _D	R _{DS(ON)} (mΩ) Max
24V	12A	6.2 @ V _{GS} =10V
		7.5 @ V _{GS} =4.5V
		8.0 @ V _{GS} =4.0V
		8.6 @ V _{GS} =3.7V
		10.3 @ V _{GS} =3.1V
		16.3 @ V _{GS} =2.5V

FEATURES

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



ABSOLUTE MAXIMUM RATINGS (T_A=25°C unless otherwise noted)

Symbol	Parameter	Limit	Units
V _{DS}	Drain-Source Voltage	24	V
V _{GS}	Gate-Source Voltage	±16	V
I _D	Drain Current-Continuous ^a c	T _A =25°C	12
		T _A =70°C	9.6
I _{DM}	-Pulsed ^c	58	A
P _D	Maximum Power Dissipation ^a	T _A =25°C	1.67
		T _A =70°C	1.07
T _J , T _{STG}	Operating Junction and Storage Temperature Range	-55 to 150	°C

THERMAL CHARACTERISTICS

R _{θJA}	Thermal Resistance, Junction-to-Ambient	75	°C/W
------------------	---	----	------

STF2459A

Ver 1.0

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Units
OFF CHARACTERISTICS						
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =250uA	24			V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =20V, V _{GS} =0V			1	uA
I _{GSS}	Gate-Body Leakage Current	V _{GS} = ±16V, V _{DS} =0V			±10	uA
ON CHARACTERISTICS						
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =1.0mA	0.5	1.0	1.5	V
R _{DS(ON)}	Drain-Source On-State Resistance	V _{GS} =10V, I _D =6A	4.1	5.1	6.2	m ohm
		V _{GS} =4.5V, I _D =6A	4.7	6.0	7.5	m ohm
		V _{GS} =4.0V, I _D =6A	5.0	6.4	8.0	m ohm
		V _{GS} =3.7V, I _D =6A	5.3	6.8	8.6	m ohm
		V _{GS} =3.1V, I _D =6A	6.1	8.0	10.3	m ohm
		V _{GS} =2.5V, I _D =6A	9.4	12.5	16.3	m ohm
g _{FS}	Forward Transconductance	V _{DS} =5V, I _D =6A		27		S
DYNAMIC CHARACTERISTICS^b						
C _{iss}	Input Capacitance	V _{DS} =10V, V _{GS} =0V f=1.0MHz		1010		pF
C _{oss}	Output Capacitance			322		pF
C _{rSS}	Reverse Transfer Capacitance			283		pF
SWITCHING CHARACTERISTICS^b						
t _{D(ON)}	Turn-On Delay Time	V _{DD} =20V I _D =6A		35		ns
t _r	Rise Time			75		ns
t _{D(OFF)}	Turn-Off Delay Time	V _{GS} =10V R _{GEN} =6 ohm		37		ns
t _f	Fall Time			80		ns
Q _g	Total Gate Charge	V _{DS} =20V, I _D =12A, V _{GS} =10V		35		nC
		V _{DS} =20V, I _D =12A, V _{GS} =4.5V		18		nC
Q _{gs}	Gate-Source Charge	V _{DS} =20V, I _D =12A, V _{GS} =10V		2		nC
Q _{gd}	Gate-Drain Charge			11		nC
DRAIN-SOURCE DIODE CHARACTERISTICS AND MAXIMUM RATINGS						
V _{SD}	Diode Forward Voltage	V _{GS} =0V, I _S =12A		0.83	1.2	V

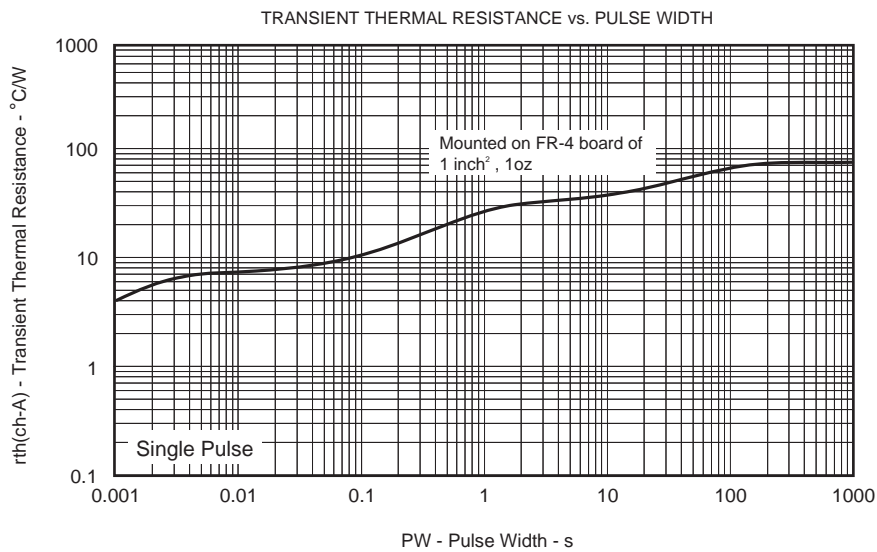
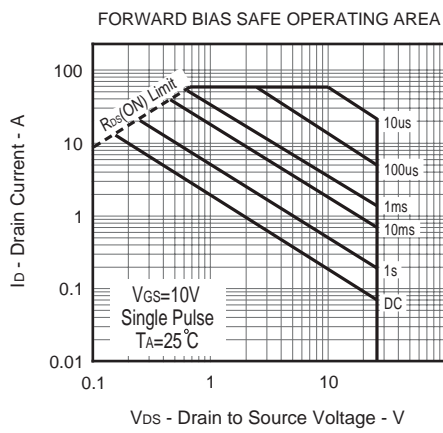
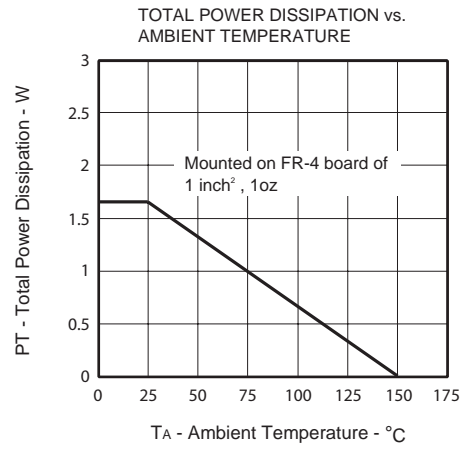
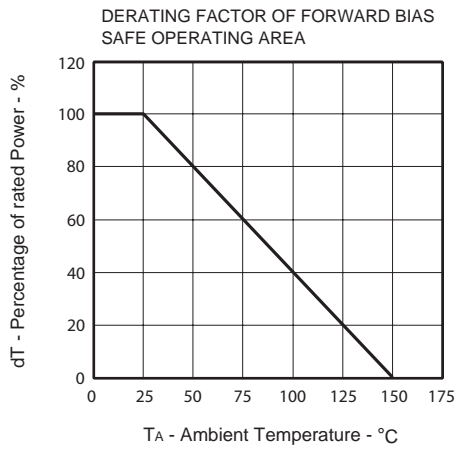
Notes

- Surface Mounted on FR4 Board of 1 inch², 1oz.
- Guaranteed by design, not subject to production testing.
- Drain current limited by maximum junction temperature.

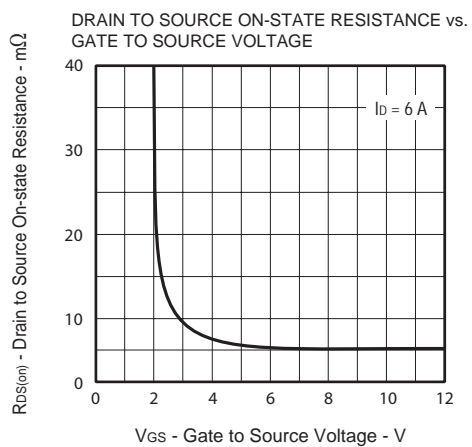
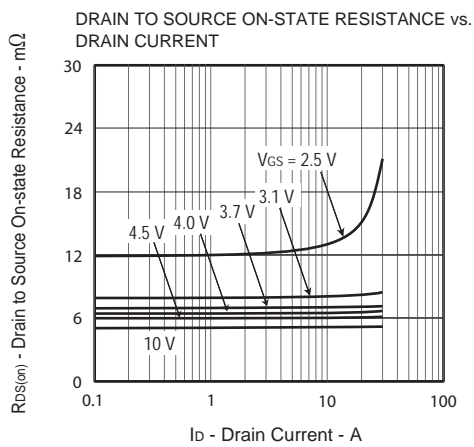
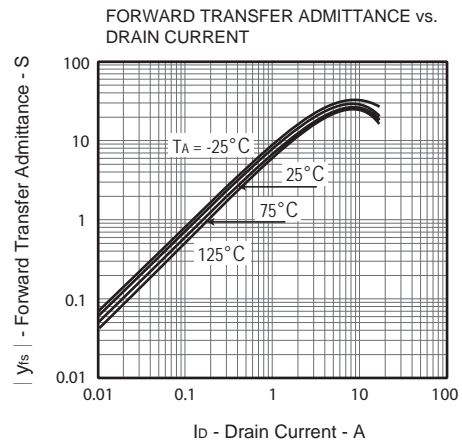
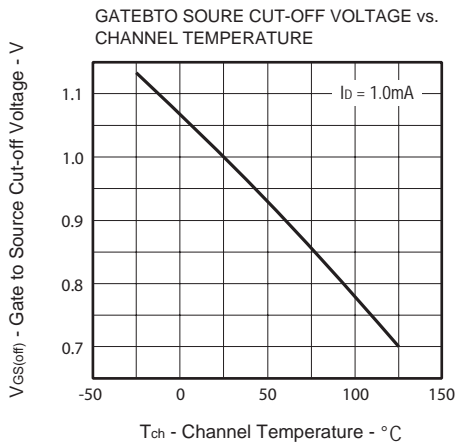
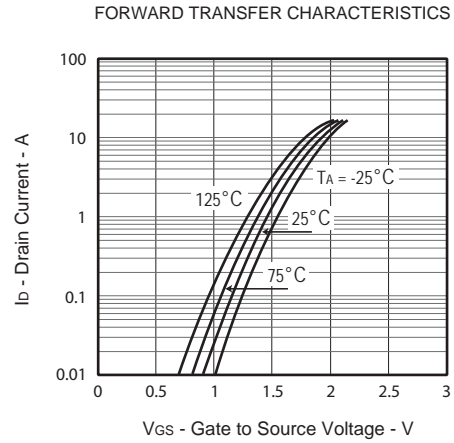
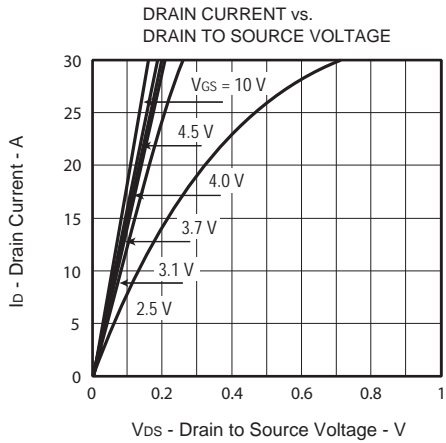
Feb,18,2014

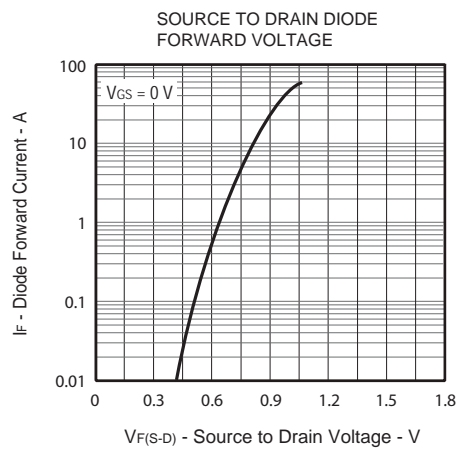
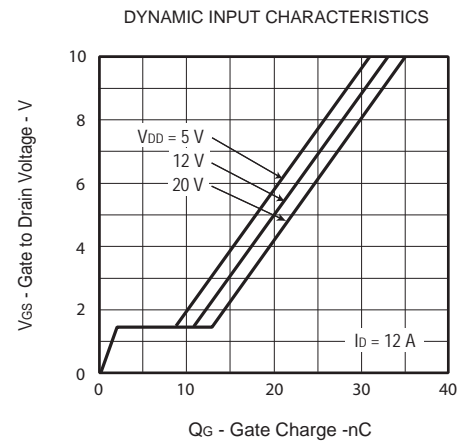
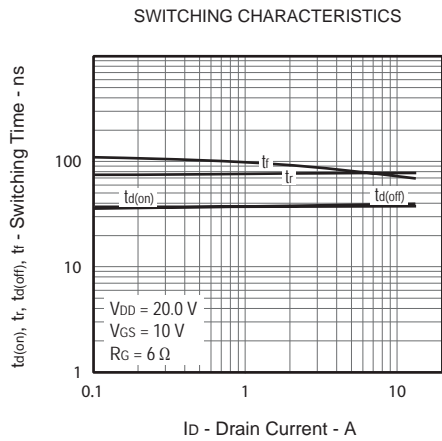
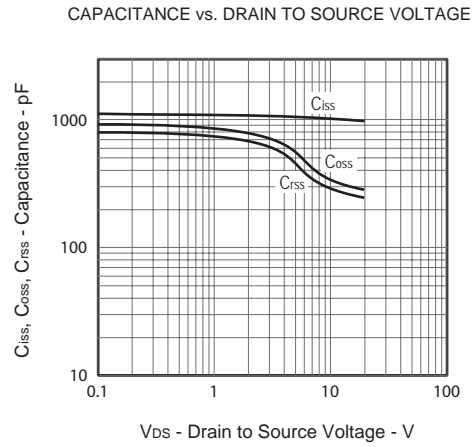
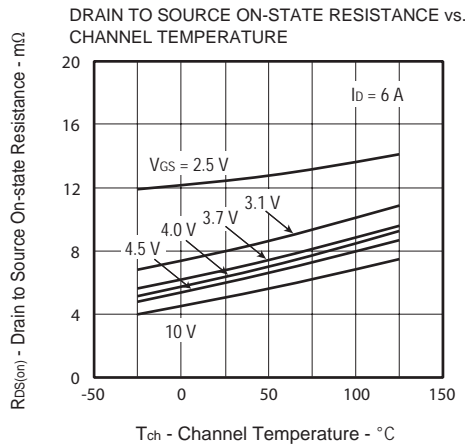
STF2459A

Ver 1.0

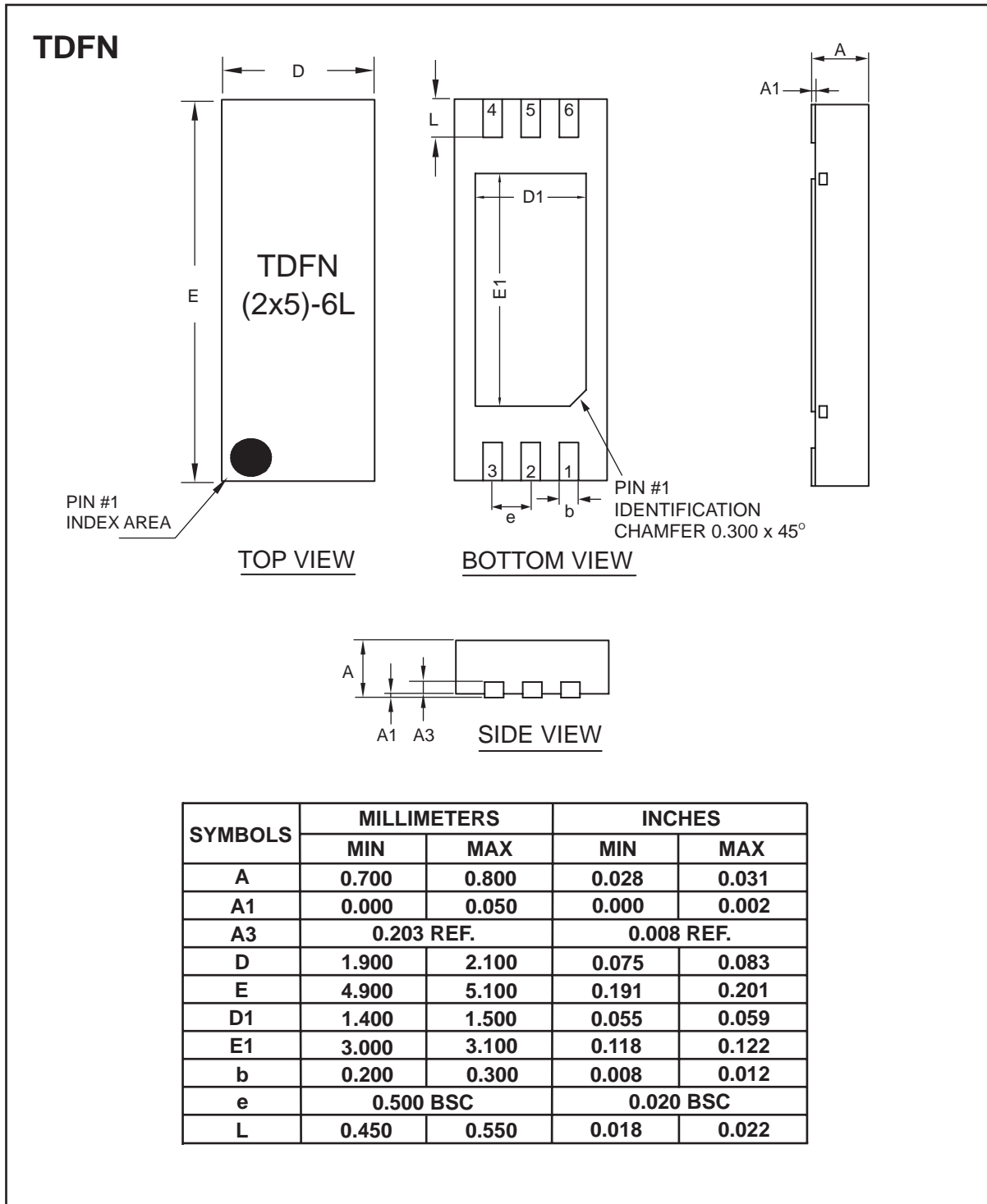


Feb,18,2014





PACKAGE OUTLINE DIMENSIONS



TOP MARKING DEFINITION

