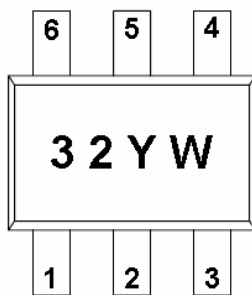


DESCRIPTION

The STC6332 is the N & P-Channel enhancement mode power field effect transistor using high cell density DMOS trench technology. This high density process is especially tailored to minimize on-state resistance and provide superior switching performance. This device is particularly suited for low voltage application such as notebook computer power management and other battery powered circuits, where high-side switching, low in-line power loss and resistance to transient are needed.

**PIN CONFIGURATION
SOT-363/SC-70-6L**

PART MARKING


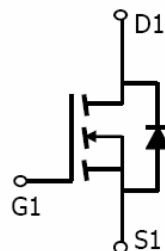
Y : Year Code
W : Week Code

FEATURE
N-Channel

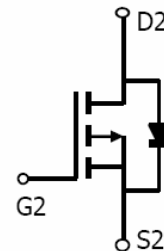
- 20V/0.95A, $R_{DS(ON)} = 380m\Omega$ (Typ.) @ $V_{GS} = 4.5V$
- 20V/0.75A, $R_{DS(ON)} = 450m\Omega$ @ $V_{GS} = 2.5V$
- 20V/0.65A, $R_{DS(ON)} = 800m\Omega$ @ $V_{GS} = 1.8V$

P-Channel

- -20V/-1.0A, $R_{DS(ON)} = 520m\Omega$ (Typ.) @ $V_{GS} = -4.5V$
- -20V/-0.8A, $R_{DS(ON)} = 700m\Omega$ @ $V_{GS} = -2.5V$
- -20V/-0.7A, $R_{DS(ON)} = 700m\Omega$ @ $V_{GS} = -1.8V$
- Super high density cell design for extremely low $R_{DS(ON)}$
- Exceptional on-resistance and maximum DC current capability
- SOT-363(SC-70-6L) package design



n-channel



p-channel



STC6332 

N&P Pair Enhancement Mode MOSFET

0.95A / -1A

ABSOLUTE MAXIMUM RATINGS (Ta = 25°C Unless otherwise noted)

Parameter	Symbol	Typical		Unit
		N	P	
Drain-Source Voltage	V _{DSS}	20	-20	V
Gate-Source Voltage	V _{GSS}	±12	±12	V
Continuous Drain Current (T _J =150°C)	I _D	T _A =25°C 1.2	-1.0	A
		T _A =80°C 0.9	-0.7	
Pulsed Drain Current	I _{DM}	4	-3	A
Continuous Source Current (Diode Conduction)	I _S	0.6	-0.6	A
Power Dissipation	P _D	T _A =25°C 0.3	0.19	W
		T _A =70°C		
Operation Junction Temperature	T _J	-55/150		°C
Storage Temperature Range	T _{STG}	-55/150		°C
Thermal Resistance-Junction to Ambient	R _{θJA}	T ≤ 10Sec 360	360	°C/W
		Steady State 400	400	



STC6332

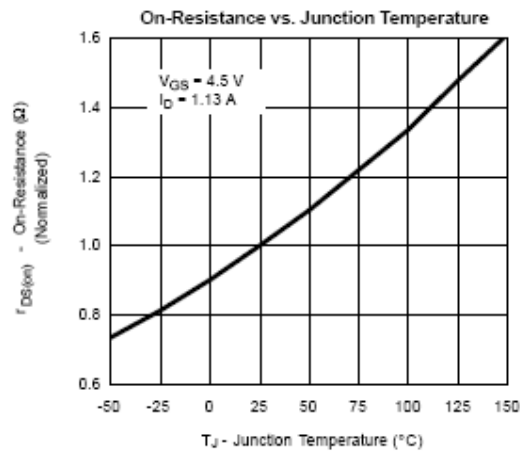
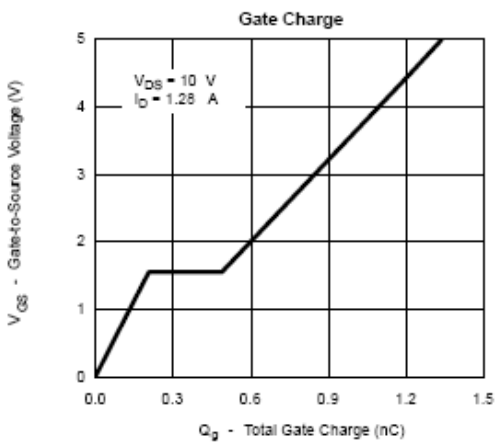
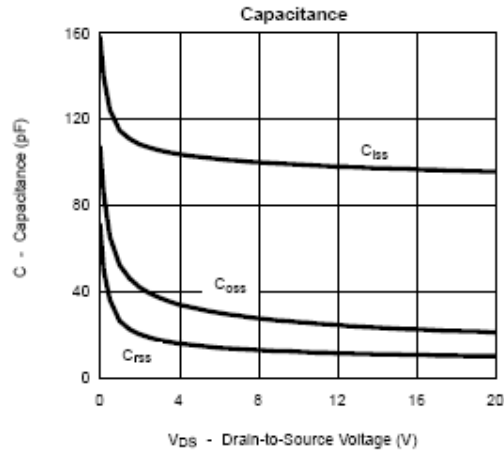
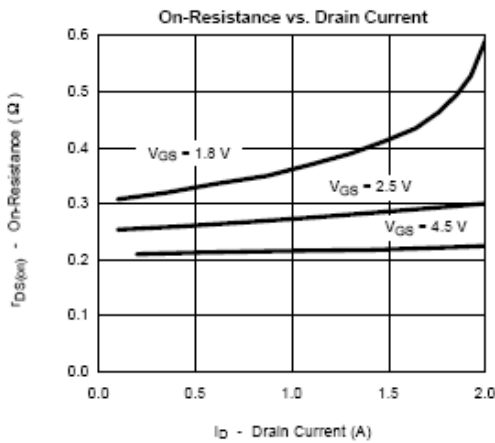
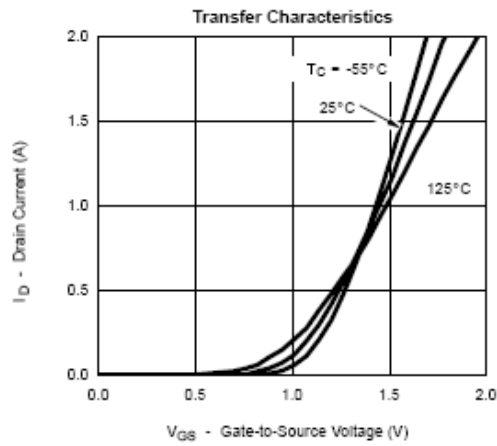
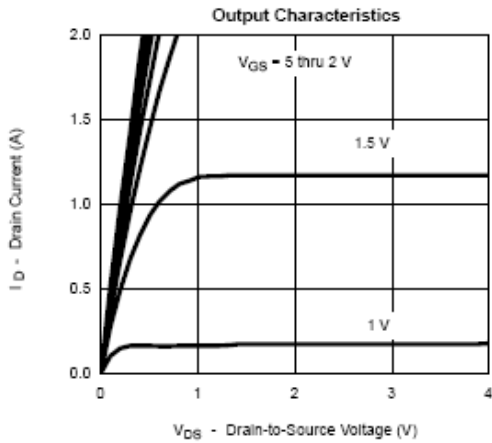
N&P Pair Enhancement Mode MOSFET

0.95A / -1A

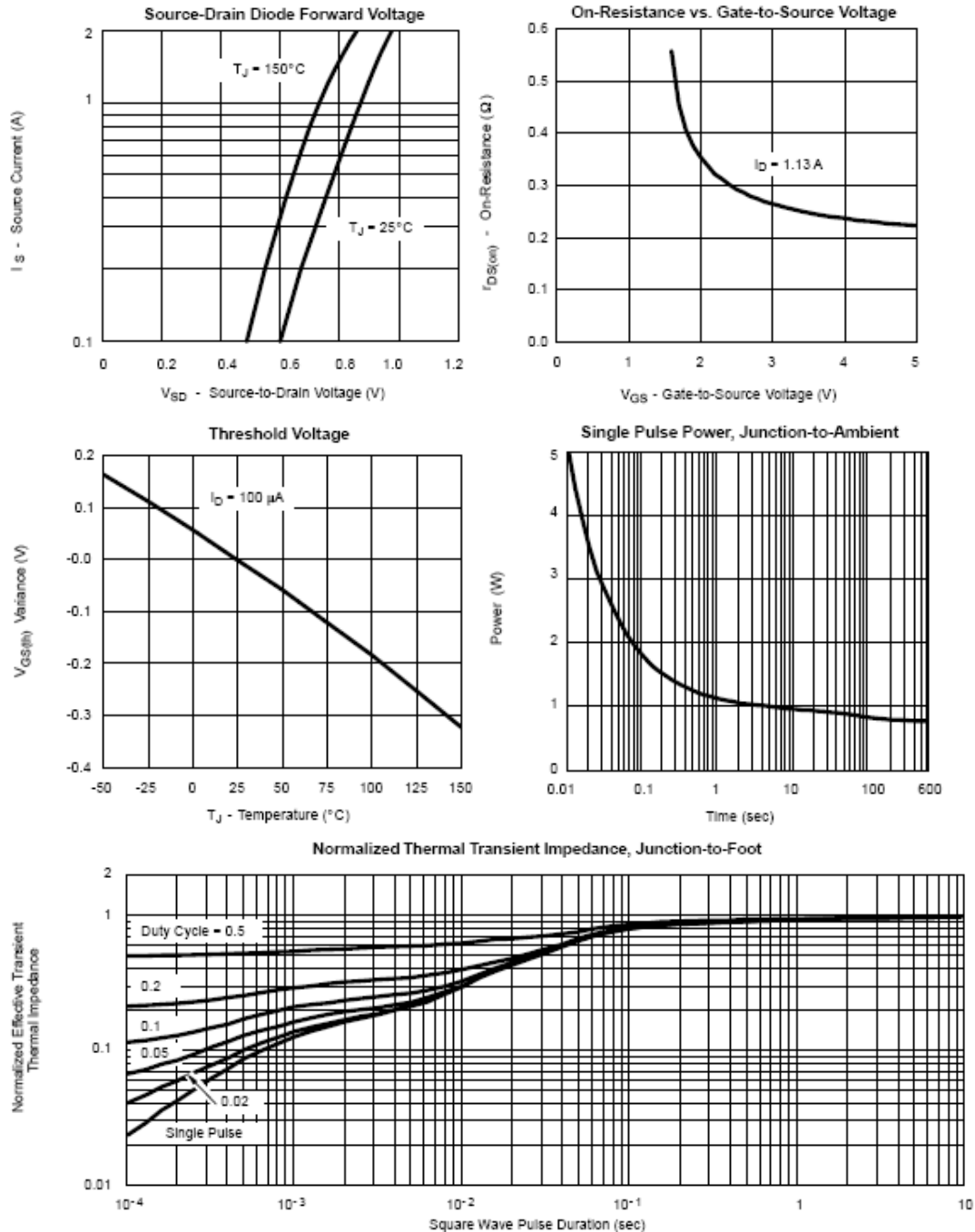
ELECTRICAL CHARACTERISTICS (Ta = 25°C Unless otherwise noted)

Parameter	Symbol	Condition	Min	Typ	Max	Unit	
Static							
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$ $V_{GS}=0V, I_D=-250\mu A$	N 20 P -20			V	
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$ $V_{DS}=V_{GS}, I_D=-250\mu A$	N 0.35 P -0.35		1.0 -1.0	V	
Gate Leakage Current	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 12V$ $V_{DS}=0V, V_{GS}=\pm 12V$	N P		100 -100	nA	
Zero Gate Voltage Drain Current	I_{DSS} $T_J=55^\circ C$	$V_{DS}=20V, V_{GS}=0V$ $V_{DS}=-20V, V_{GS}=0V$ $V_{DS}=20V, V_{GS}=0V$ $V_{DS}=-20V, V_{GS}=0V$	N P N P		1 -1 5 -5	μA	
On-State Drain Current	$I_{D(on)}$	$V_{DS} \geq 4.5V, V_{GS}=5V$ $V_{DS} \leq -4.5V, V_{GS}=-5V$	N 2 P -2			A	
Drain-source On-Resistance	$R_{DS(on)}$	$V_{GS}=4.5V, I_D=0.95A$ $V_{GS}=-4.5V, I_D=-1.0A$ $V_{GS}=2.5V, I_D=0.75A$ $V_{GS}=-2.5V, I_D=-0.8A$ $V_{GS}=1.8V, I_D=0.65A$ $V_{GS}=-1.8V, I_D=-0.5A$	N P N P N P		0.26 0.42 0.32 0.58 0.42 0.75	0.38 0.52 0.45 0.70 0.80 0.95	Ω
Forward Tran Conductance	g_{fs}	$V_{DS}=10V, I_D=1.2A$ $V_{DS}=-10V, I_D=-1.0A$	N P	2.6 1.5		S	
Diode Forward Voltage	V_{SD}	$I_S=0.5A, V_{GS}=0V$ $I_S=-0.5A, V_{GS}=0V$	N P	0.8 -0.8	1.2 -1.2	V	
Dynamic							
Total Gate Charge	Q_g	N-Channel $V_{DS}=10V, V_{GS}=4.5V$ $I_D \equiv 1.2A$	N P		1.2 1.1	2.0 1.8	nC
Gate-Source Charge	Q_{gs}	P-Channel	N P		0.2 0.3		
Gate-Drain Charge	Q_{gd}	$V_{DS}=-10V, V_{GS}=-4.5V$ $I_D \equiv -1.0A$	N P		0.3 0.2		
Turn-On Time	$t_{d(on)}$ t_{tr}	N-Channel $V_{DS}=10V, R_L=20\Omega$ $I_D=0.5A, R_{GEN}=6\Omega$ $V_{GEN}=4.5V$	N P N P		15 18 20 25	25 30 30 40	nS
Turn-Off Time	$t_{d(off)}$ t_{tf}	P-Channel $V_{DS}=-10V, R_L=20\Omega$ $I_D=-0.5A, R_{GEN}=-6\Omega$ $V_{GEN}=-4.5V$	N P N P		25 20 12 12	40 30 20 20	

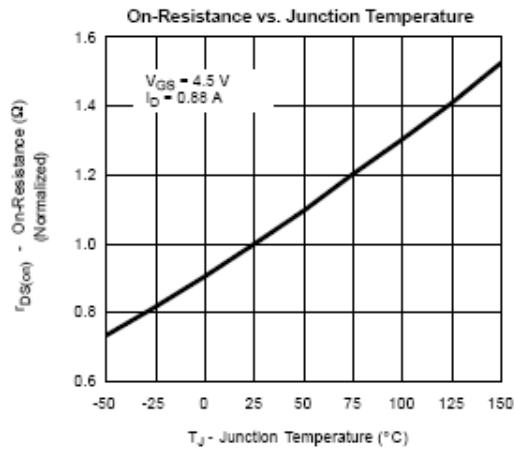
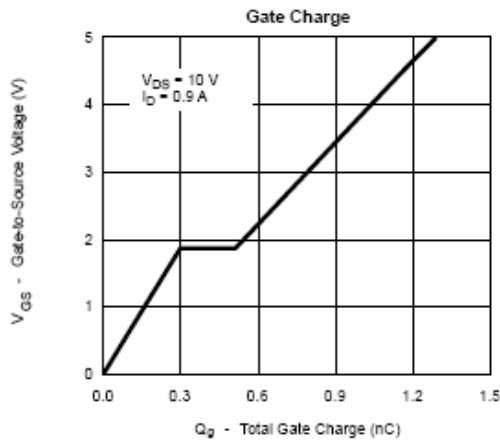
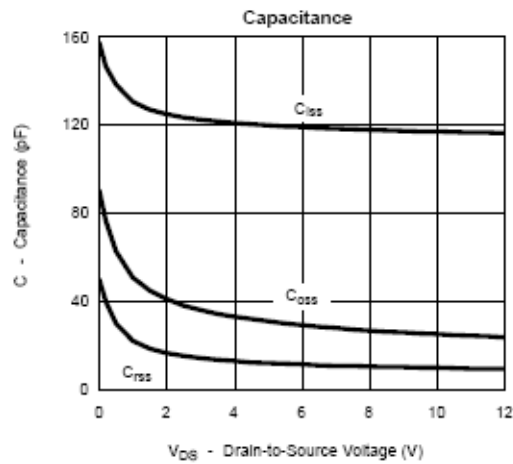
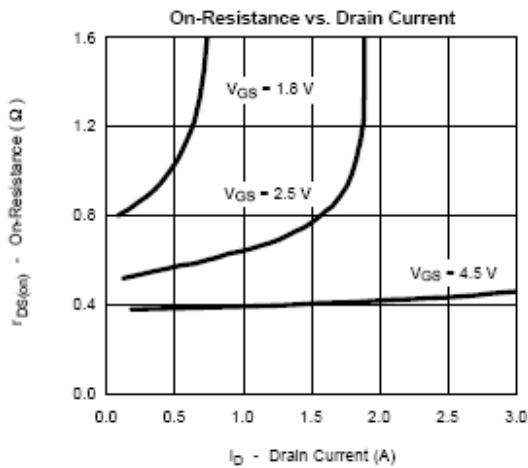
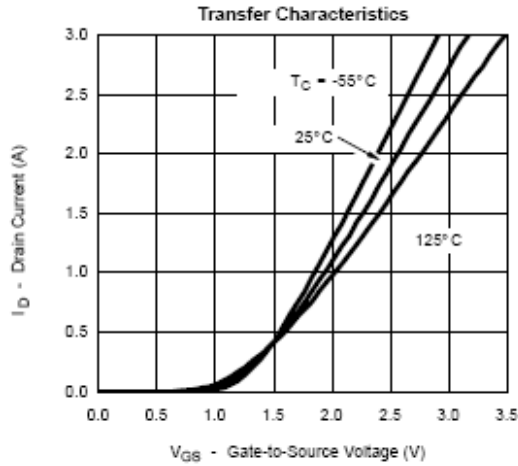
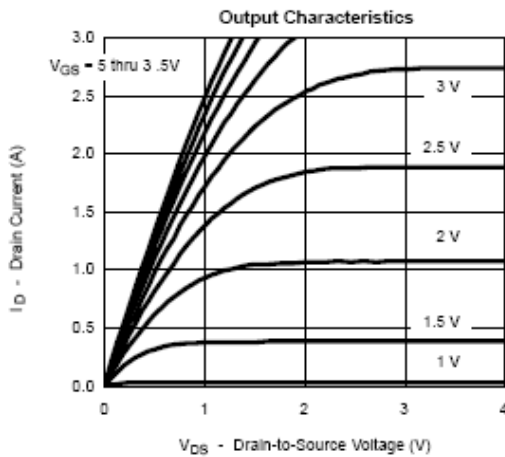
TYPICAL CHARACTERISTICS (N MOS)



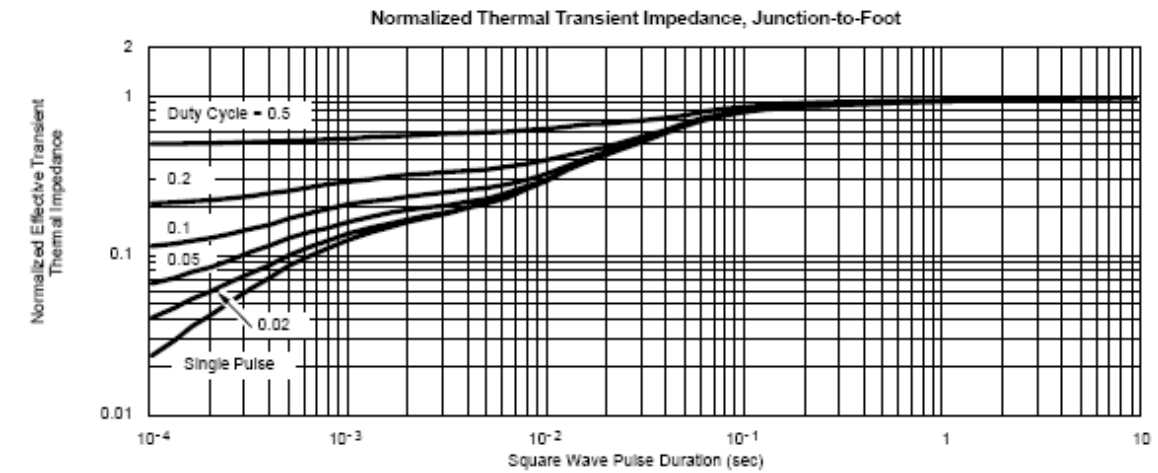
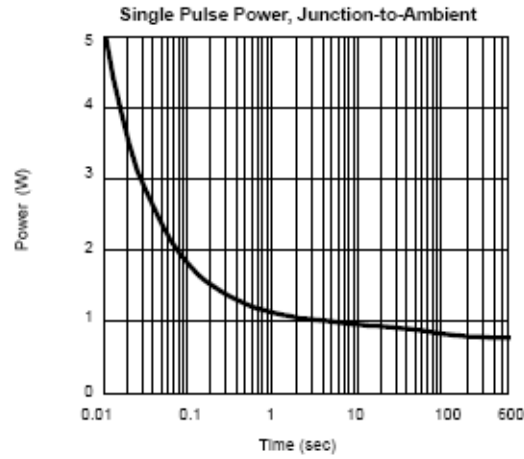
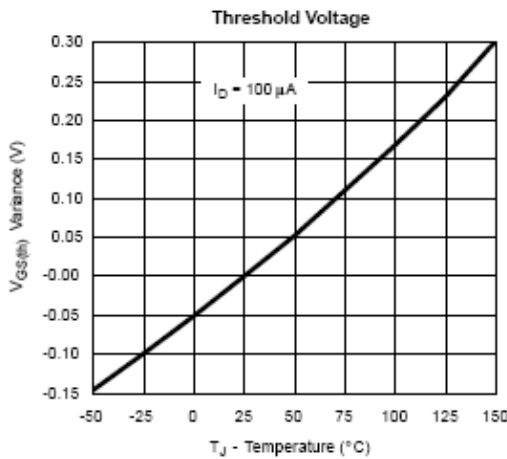
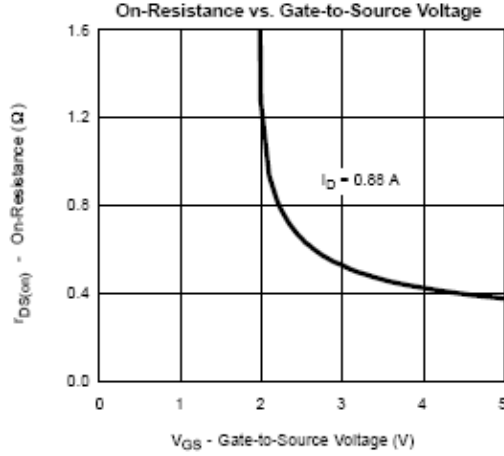
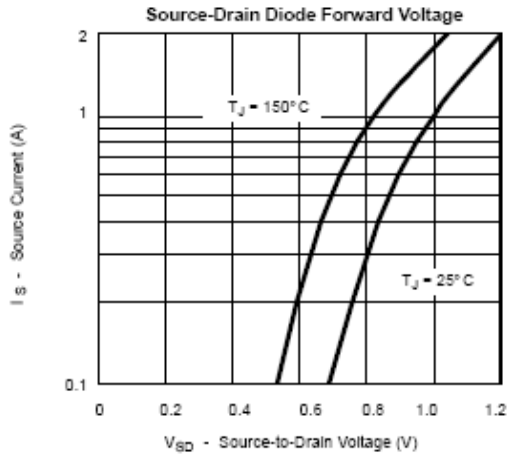
TYPICAL CHARACTERISTICS (N MOS)

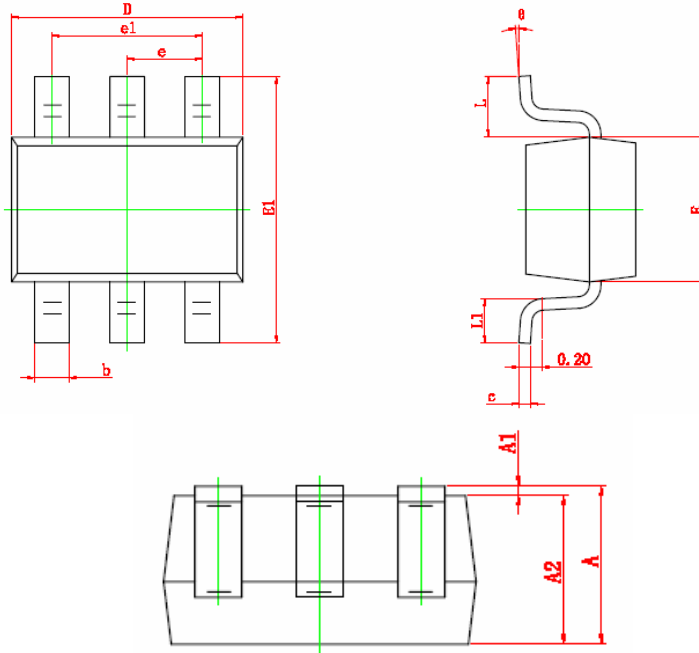


YPICAL CHARACTERISTICS (P MOS)



TYPICAL CHARACTERISTICS (P MOS)



SOP-8 PACKAGE OUTLINE


Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.150	0.350	0.006	0.014
c	0.080	0.150	0.003	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.150	2.450	0.085	0.096
e	0.650 TYP		0.026 TYP	
e1	1.200	1.400	0.047	0.055
L	0.525 REF		0.021 REF	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°



STC6332 

N&P Pair Enhancement Mode MOSFET

0.95A / -1A

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