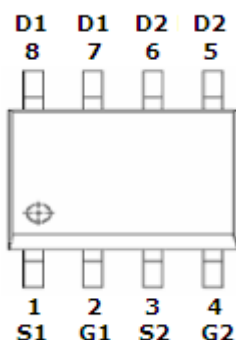


DESCRIPTION

The STC4567 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 SOP-8



PART MARKING



Y : Year A : Product code

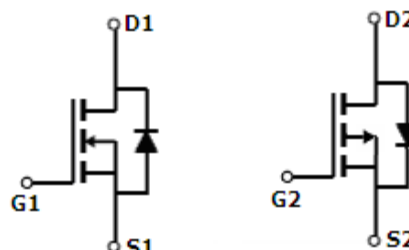
FEATURE

N-Channel

- 40V/6.0A, $R_{DS(ON)} = 48m\Omega$ (Typ.)
@ $V_{GS} = 10V$
- 40V/5.0A, $R_{DS(ON)} = 63m\Omega$
@ $V_{GS} = 4.5V$

P-Channel

- -40V/-7.2A, $R_{DS(ON)} = 90m\Omega$ (Typ.)
@ $V_{GS} = -10V$
- -40V/-5.0A, $R_{DS(ON)} = 103m\Omega$
@ $V_{GS} = -4.5V$
- Super high density cell design for extremely low $R_{DS(ON)}$
- Exceptional on-resistance and maximum DC current capability
- SOP-8 package



ORDERING INFORMATION

Part Number	Package	Part Marking
STC4567S8RG	SOP-8	STC4567

※ Process Code : A ~ Z ; a ~ z

※ STC4567S8RG S8 : SOP-8 ; R : Tape Reel ; G : Pb - Free


STC4567


N&P Pair Enhancement Mode MOSFET

10A / -10A

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

Parameter		Symbol	Typical N P		Unit
Drain-Source Voltage		V _{DSS}	40	-40	V
Gate-Source Voltage		V _{GSS}	±20	±20	V
Continuous Drain Current (T _J =150°C)	T _A =25°C T _A =70°C	I _D	6.0 5.0	-7.2 -5.0	A
Pulsed Drain Current		I _{DM}	20	-20	A
Continuous Source Current (Diode Conduction)		I _S	2.3	-2.3	A
Power Dissipation	T _A =25°C T _A =70°C	P _D	2.5 1.28	2.5 1.28	W
Operation Junction Temperature		T _J	150		°C
Storage Temperature Range		T _{STG}	-55/150		°C
Thermal Resistance-Junction to Ambient	T ≤ 10Sec Steady State	R _{θJA}	52.5 80	62.5 80	°C/W

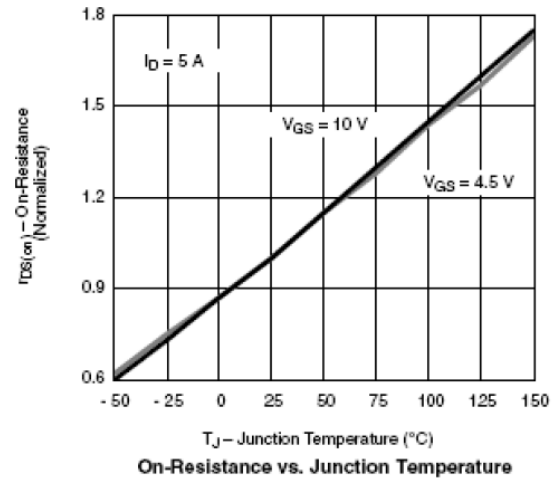
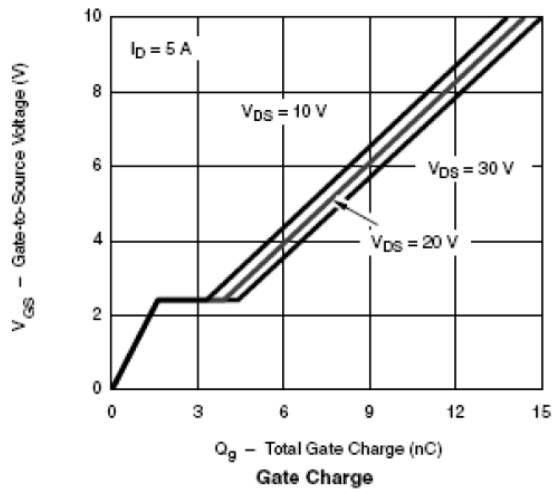
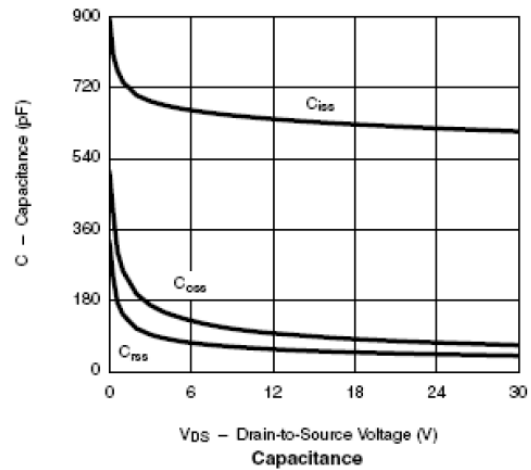
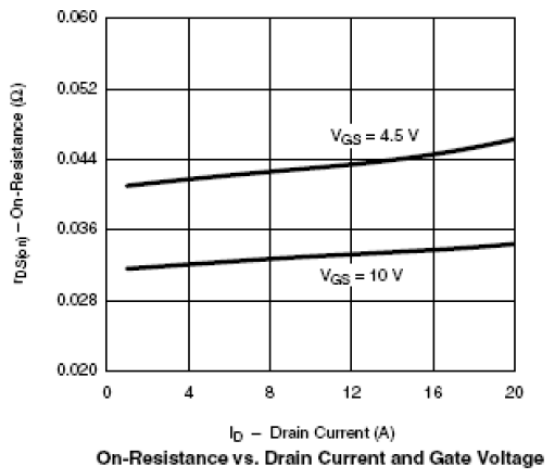
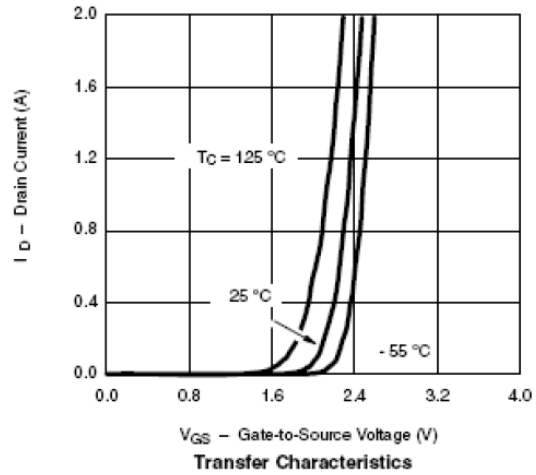
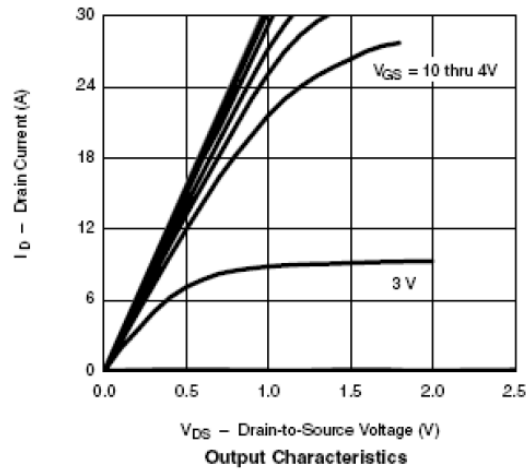

STC4567

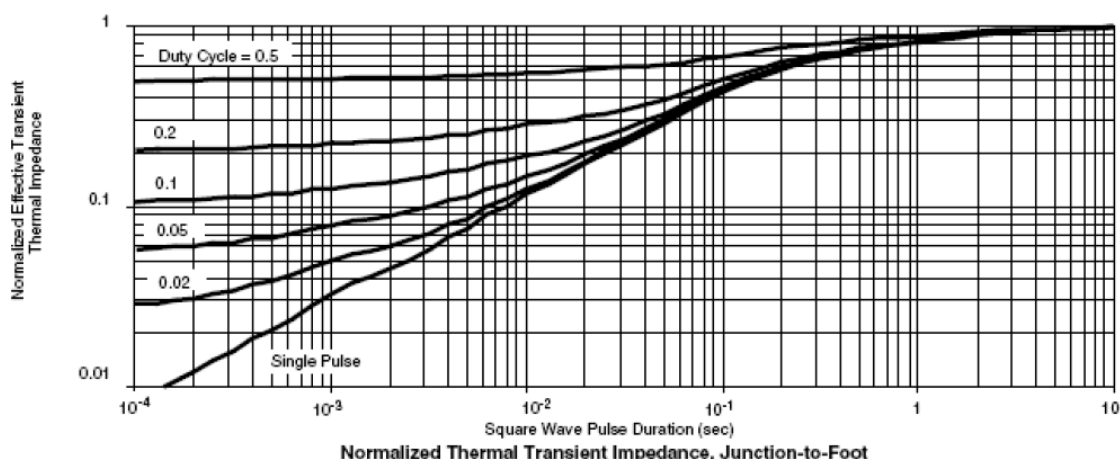
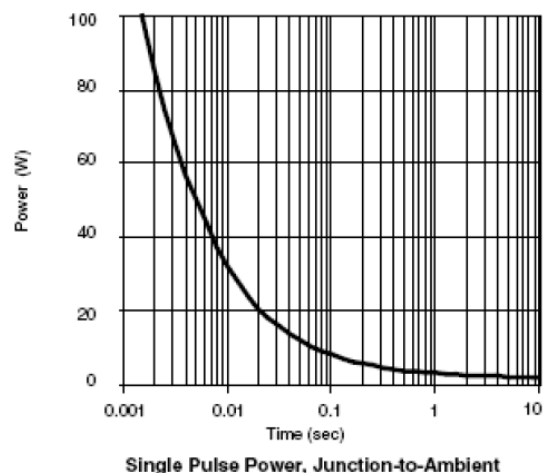
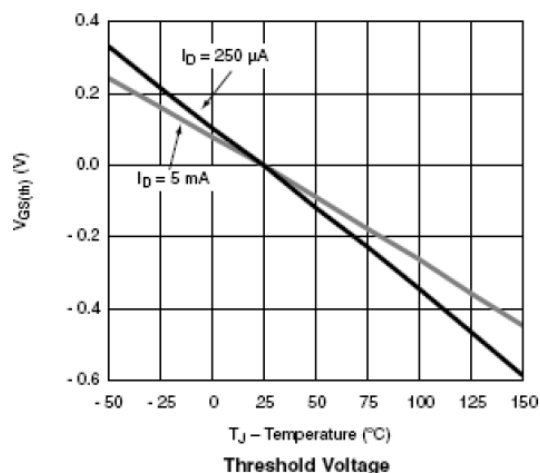
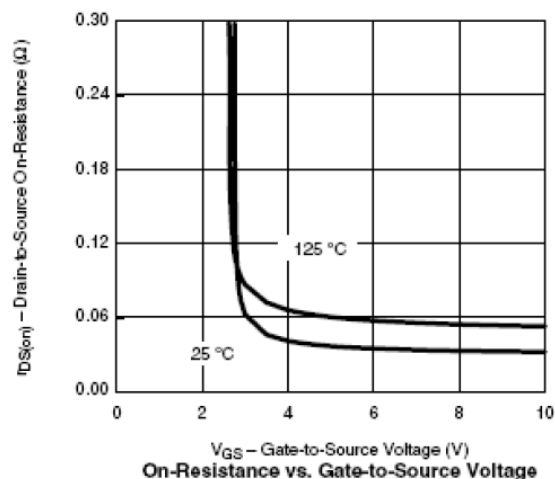
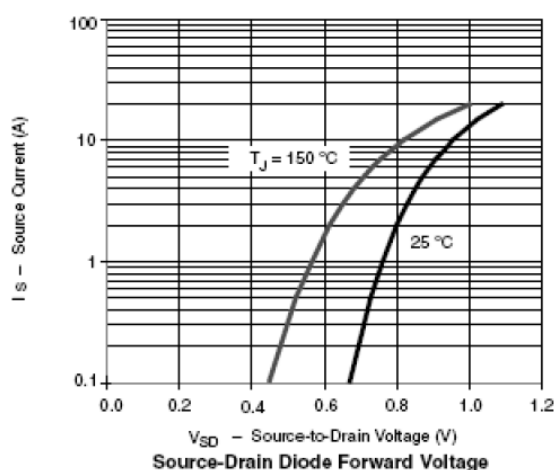

N&P Pair Enhancement Mode MOSFET

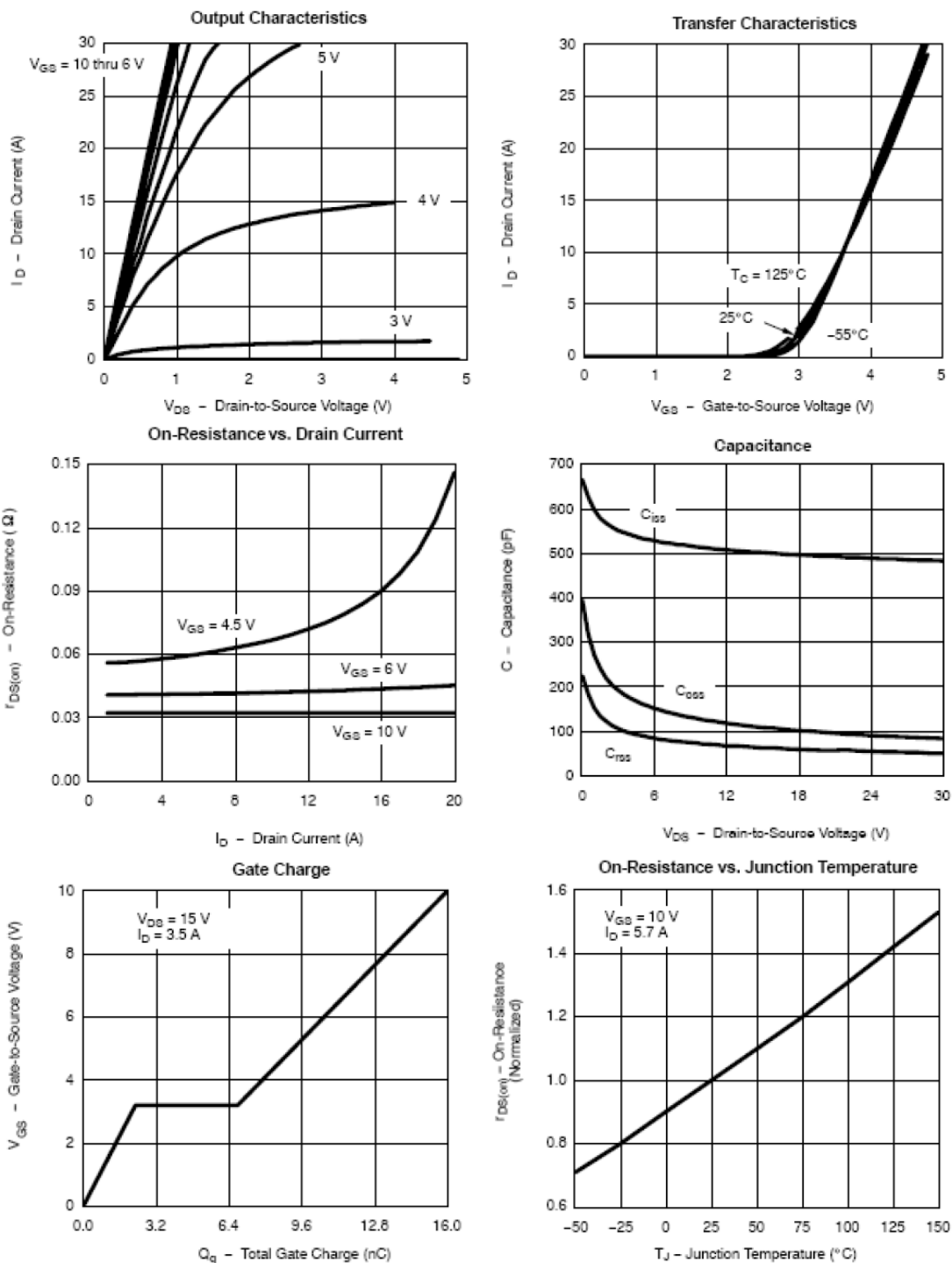
10A / -10A

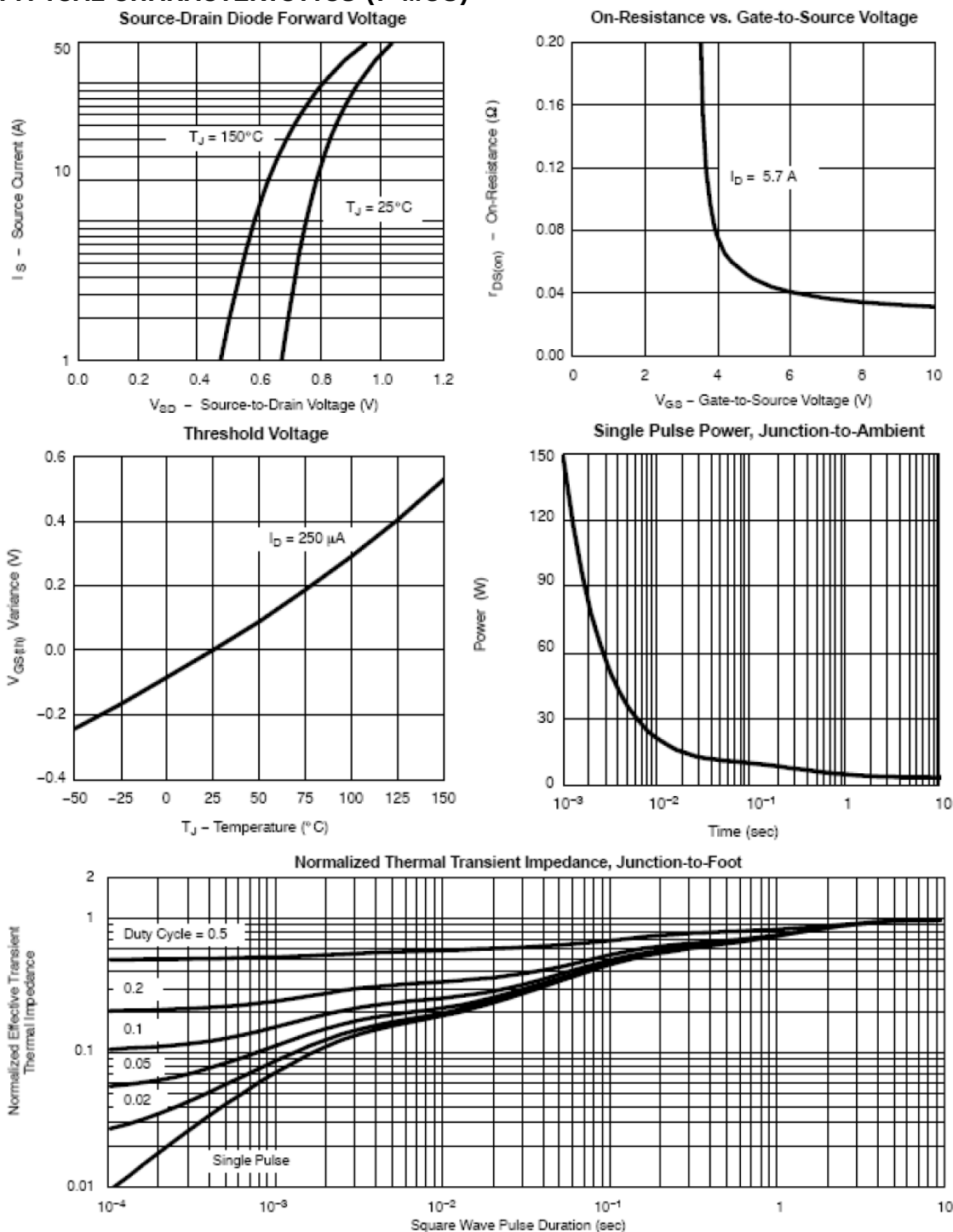
ELECTRICAL CHARACTERISTICS (Ta = 25°C Unless otherwise noted)

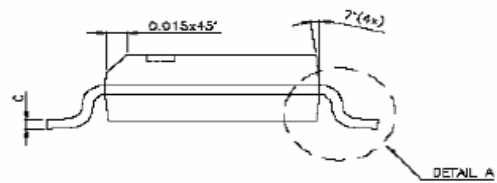
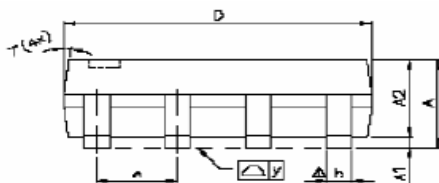
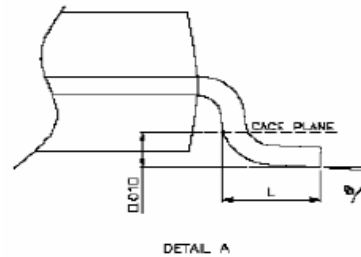
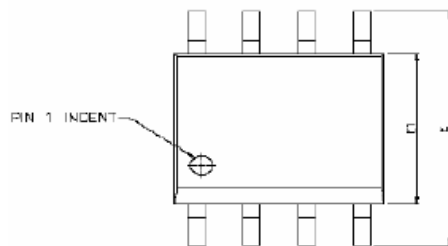
Parameter	Symbol	Condition	Min	Typ	Max	Unit	
Static							
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=10mA$ $V_{GS}=0V, I_D=-10mA$	N 40 P -40			V	
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\text{ }\mu A$ $V_{DS}=V_{GS}, I_D=-250\mu A$	N 0.5 P -0.8		1.0 -2.5	V	
Gate Leakage Current	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 20V$ $V_{DS}=0V, V_{GS}=\pm 20V$	N P		± 100 ± 100	nA	
Zero Gate Voltage Drain Current	I_{DSS} $T_J=55^{\circ}C$	$V_{DS}=36V, V_{GS}=0V$	N		1	μA	
		$V_{DS}=-36V, V_{GS}=0V$	P		-1		
		$V_{DS}=32V, V_{GS}=0V$	N		5		
		$V_{DS}=-32V, V_{GS}=0V$	P		-5		
On-State Drain Current	$I_{D(on)}$	$V_{DS}\geq 5V, V_{GS}=10V$ $V_{DS}\leq -5V, V_{GS}=-10V$	N 10 P -10			A	
Drain-source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=6.0A$	N		0.048	Ω	
		$V_{GS}=-10V, I_D=-7.2A$	P		0.093		
		$V_{GS}=4.5V, I_D=5.0A$ $V_{GS}=-4.5V, I_D=-5.0\text{ A}$	N P	 	0.058 0.103		
Forward Tran Conductance	g_{fs}	$V_{DS}=15V, I_D=6.9A$ $V_{DS}=-15V, I_D=-5.9A$	N P	 	22 13	S	
Diode Forward Voltage	V_{SD}	$I_S=1.0A, V_{GS}=0V$ $I_S=-1.7A, V_{GS}=0V$	N P		1.2 -1.0	V	
Dynamic							
Total Gate Charge	Q_g	N-Channel $V_{DS}=15V, V_{GS}=10V$ $I_D\equiv 2.0A$ P-Channel $V_{DS}=-15V, V_{GS}=-10V$ $I_D\equiv -3.5A$	N P		16 9	24 12	nC
Gate-Source Charge	Q_{gs}		N P		3 1.5		
Gate-Drain Charge	Q_{gd}		N P		2.3 2.0		
Turn-On Time	$t_{d(on)tr}$	N-Channel $V_{DS}=15V, R_L=15\Omega$ $I_D=1A, R_{GEN}=6\Omega$ $V_{GEN}=10V$ P-Channel $V_{DS}=-15V, R_L=15\Omega$ $I_D=-1A, R_{GEN}=-6\Omega$ $V_{GEN}=10V$	N P		4.6 8	6.0 20	nS
			N P		3.1 10	4 20	
Turn-Off Time	$t_{d(off)tf}$		N P		15.6 30	21 34	
			N P		3.0 25	4.0 20	

TYPICAL CHARACTERISTICS (N MOS)


TYPICAL CHARACTERISTICS (N MOS)


YPICAL CHARACTERISTICS (P MOS)


TYPICAL CHARACTERISTICS (P MOS)


SOP-8 PACKAGE OUTLINE


SYMBOLS	DIMENSIONS IN MILLIMETERS			DIMENSIONS IN INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	1.47	1.60	1.73	0.058	0.063	0.068
A1	0.10	—	0.25	0.004	—	0.010
A2	—	1.45	—	—	0.057	—
b	0.33	0.41	0.51	0.013	0.016	0.020
C	0.19	0.20	0.25	0.0075	0.008	0.0098
D	4.80	4.85	4.95	0.189	0.191	0.195
E	5.80	6.00	6.20	0.228	0.236	0.244
E1	3.80	3.90	4.00	0.150	0.154	0.157
e	—	1.27	—	—	0.050	—
L	0.38	0.71	1.27	0.015	0.028	0.050
Δy	—	—	0.076	—	—	0.003
θ	0°	—	8°	0°	—	8°