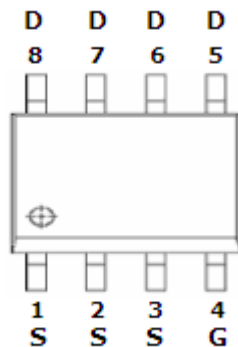
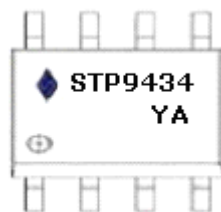


**DESCRIPTION**

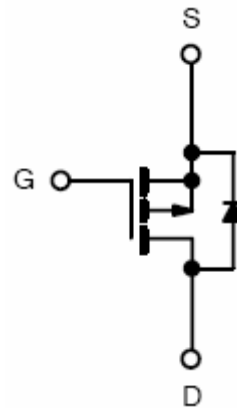
STP9434 is the P-Channel logic enhancement mode power field effect transistors are produced using high cell density, DMOS trench technology. This high density process is especially tailored to minimize on-state resistance. These devices are particularly suited for low voltage application, such as cellular phone and notebook computer power management and other battery powered circuits, and low in-line power loss are needed in a very small outline surface mount package.

**PIN CONFIGURATION  
SOP-8**

**FEATURE**

- -20V/-7.2A,  $R_{DS(ON)} = 40m\Omega$   
@ $V_{GS} = -4.5V$
- -20V/-5.2A,  $R_{DS(ON)} = 52m\Omega$   
@ $V_{GS} = -2.5V$
- -20V/-3.6A,  $R_{DS(ON)} = 62m\Omega$   
@ $V_{GS} = -1.8V$
- Super high density cell design for extremely low  $R_{DS(ON)}$
- Exceptional on-resistance and maximum DC current capability
- SOP-8 package design

**PART MARKING  
SOP-8**


**Y:Year Code**  
**A:Process Code**





**STP9434** 

P Channel Enhancement Mode MOSFET

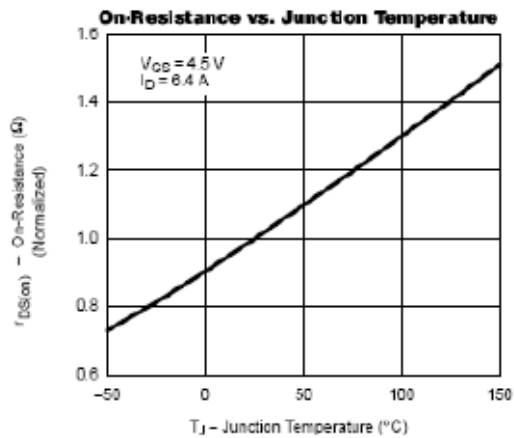
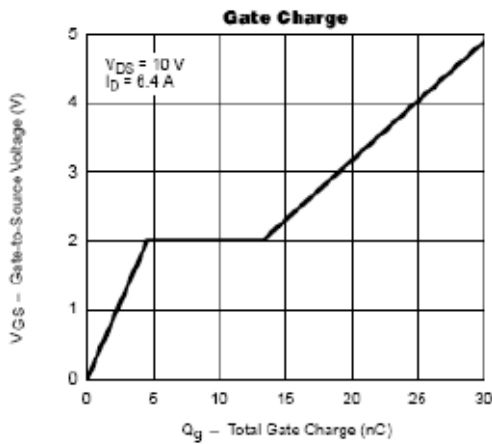
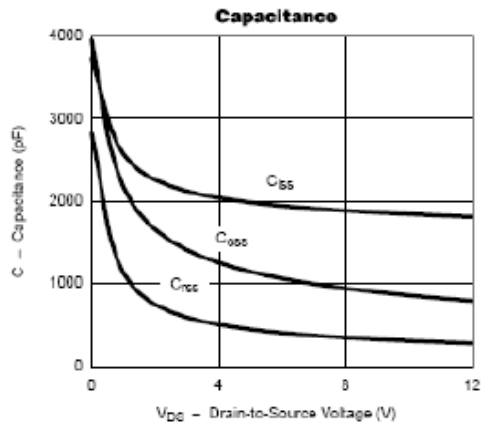
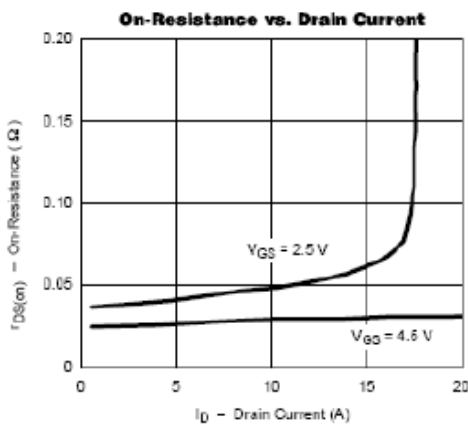
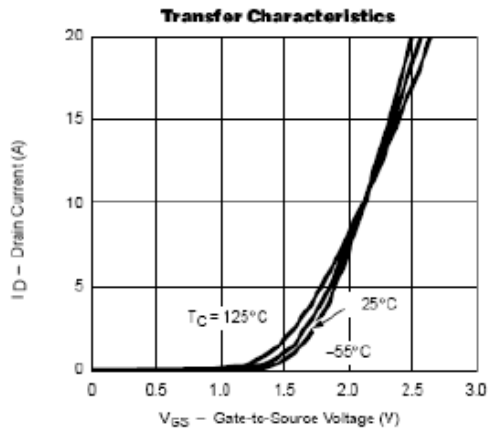
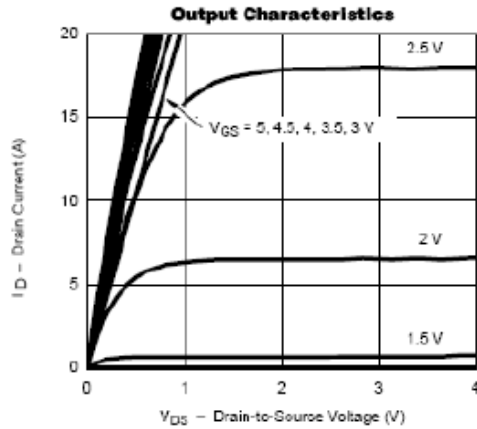
- 7.2A

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

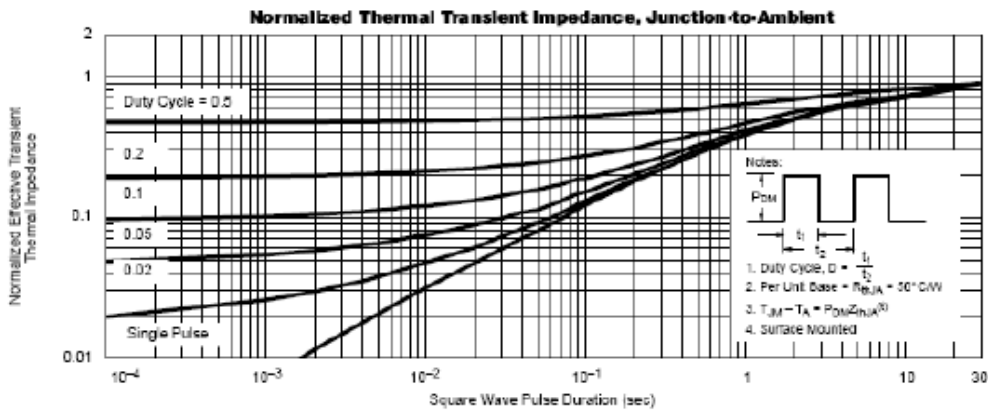
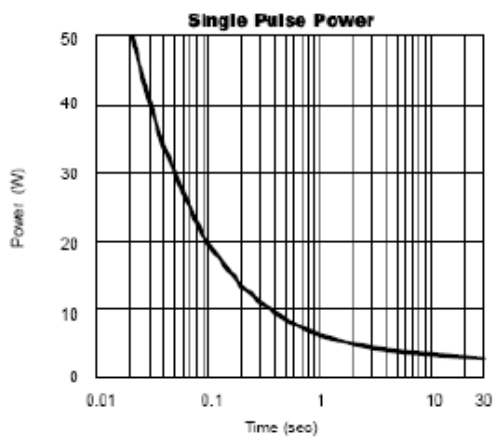
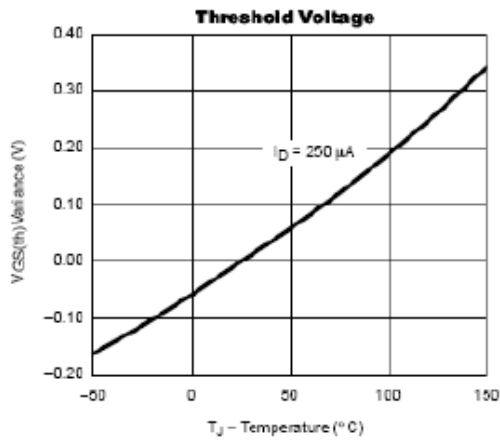
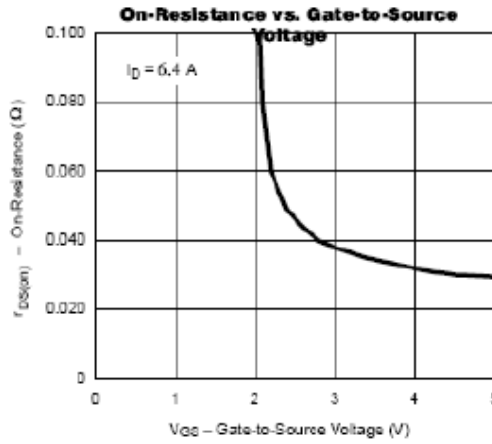
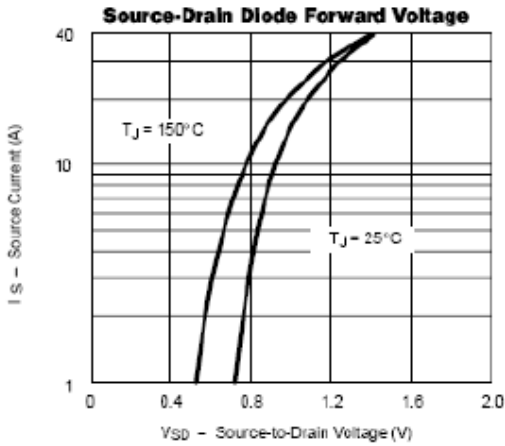
Parameter	Symbol	Typical	Unit
Drain-Source Voltage	VDSS	-20	V
Gate-Source Voltage	VGSS	±12	V
Continuous Drain Current (TJ=150°C)	ID	TA=25°C -7.6	A
		TA=70°C -5.4	
Pulsed Drain Current	IDM	-30	A
Continuous Source Current (Diode Conduction)	IS	-2.3	A
Power Dissipation	PD	TA=25°C 2.8	W
		TA=70°C 1.8	
Operation Junction Temperature	TJ	-55/150	°C
Storage Temperature Range	TSTG	-55/150	°C
Thermal Resistance-Junction to Ambient	RθJA	70	°C/W

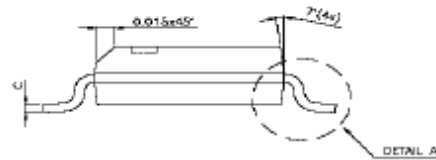
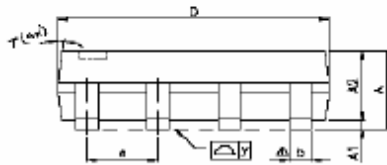
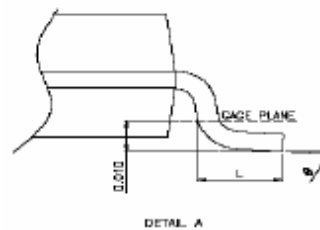
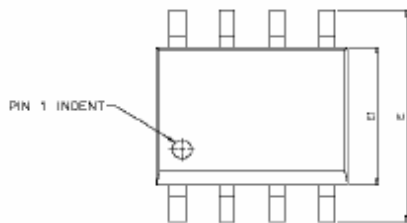
**ELECTRICAL CHARACTERISTICS** ( Ta = 25°C Unless otherwise noted )

Parameter	Symbol	Condition	Min	Typ	Max	Unit
<b>Static</b>						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=-250\mu A$	-20			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-0.35		-0.9	V
Gate Leakage Current	$I_{GSS}$	$V_{DS}=0V, V_{GS}=\pm 12V$			$\pm 100$	nA
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=-20V, V_{GS}=0V$			-1	uA
		$V_{DS}=-20V, V_{GS}=0V$ $T_J=55^\circ C$			-10	
On-State Drain Current	$I_{D(on)}$	$V_{DS}=-5V, V_{GS}=-4.5V$	-10			A
Drain-source On-Resistance	$R_{DS(on)}$	$V_{GS}=-4.5V, I_D=-7.2A$		30	40	mΩ
		$V_{GS}=-2.5V, I_D=-5.2A$		40	52	
		$V_{GS}=-1.8V, I_D=-3.6A$		50	62	
Forward Transconductance	$g_{fs}$	$V_{DS}=-5.0V, I_D=-6.2A$		14		S
Diode Forward Voltage	$V_{SD}$	$I_S=-2.5A, V_{GS}=0V$		-0.8	-1.2	V
<b>Dynamic</b>						
Total Gate Charge	$Q_g$	$V_{DS}=-10V, V_{GS}=-5V$ $I_D=-6.4A$		20	25	nC
Gate-Source Charge	$Q_{gs}$			4.5		
Gate-Drain Charge	$Q_{gd}$			8.0		
Input Capacitance	$C_{iss}$	$V_{DS}=-10V, V_{GS}=0V$ $f=1MHz$		700		pF
Output Capacitance	$C_{oss}$			160		
Reverse Transfer Capacitance	$C_{rss}$			120		
Turn-On Time	$t_{d(on)}$	$V_{DD}=-10V, R_L=6\Omega$ $I_D=-1A, V_{GEN}=-4.5V$ $R_G=6\Omega$		20	30	nS
	$t_r$			40	65	
Turn-Off Time	$t_{d(off)}$			90	120	
	$t_f$			70	90	

**TYPICAL CHARACTERISTICS**


**TYPICAL CHARACTERISTICS**



**PACKAGE OUTLINE SOP-8P**


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
$\Delta$ y	—	—	0.076	—	—	0.003
$\theta$	0°	—	8°	0°	—	8°