

DESCRIPTION

The STP4407 is the P-Channel logic enhancement mode power field effect transistor is

STP4407

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

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Static						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=-250\mu A$	-30			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-1.0		-2.5	V
Gate Leakage Current	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 20V$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS} $T_J=55^\circ C$	$V_{DS}=-30V, V_{GS}=0V$			-1	uA
		$V_{DS}=-30V, V_{GS}=0V$			-5	
Drain-source On-Resistance	$R_{DS(on)}$	$V_{GS}=-10V, I_D=-10A$		15	20	mΩ
		$V_{GS}=-4.5V, I_D=-6.0A$		24	32	
Forward Transconductance	g_{fs}	$V_{DS}=-5V, I_D=-10A$		26		S
Diode Forward Voltage	V_{SD}	$I_S=-1.0A, V_{GS}=0V$			-1	V
Dynamic						
Total Gate Charge	Q_g	$V_{DS}=-15V, V_{GS}=0V$ $f=1MHz$		30		nC
Gate-Source Charge	Q_{gs}			4.3		
Gate-Drain Charge	Q_{gd}			10		
Input Capacitance	C_{iss}	$V_{DS}=-15V, V_{GS}=0V$ $f=1MHz$		2076	2500	pF
Output Capacitance	C_{oss}			400		
Reverse Transfer Capacitance	C_{rss}			302		
Turn-On Time	$t_{d(on)}$ t_r	$V_{DD}=15V, R_L=1.25\Omega$ $I_D=-1A, V_{GEN}=-10V$ $R_G=3\Omega$		10.4		nS
				24		
Turn-Off Time	$t_{d(off)}$ t_f			12.6		
				12		

TYPICAL CHARACTERISTICS

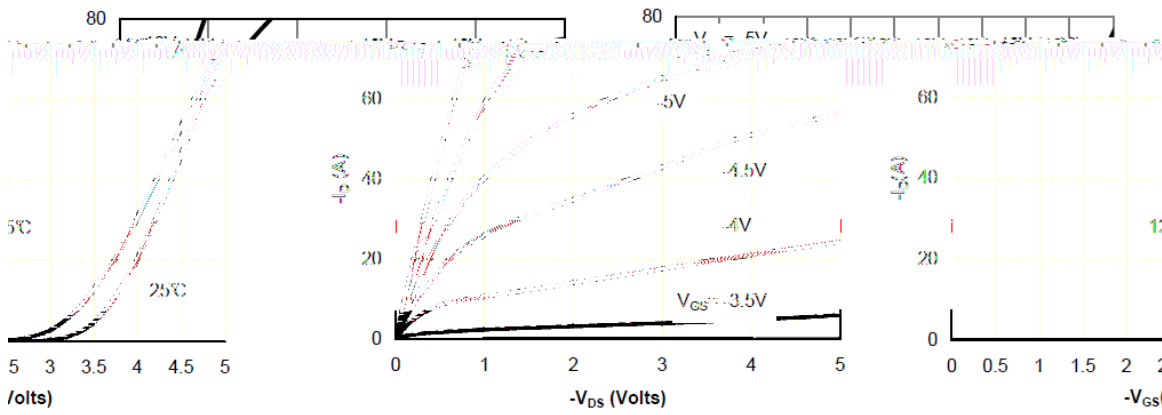


Figure 1: On-Region Characteristics

Figure 2: Transfer Characteristics

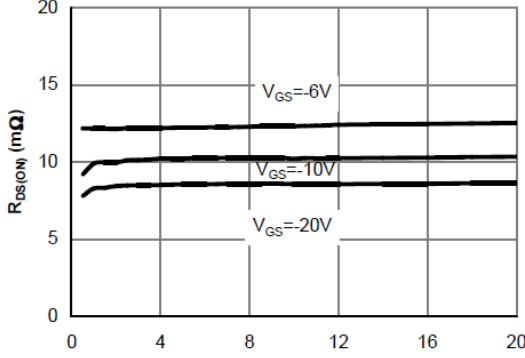
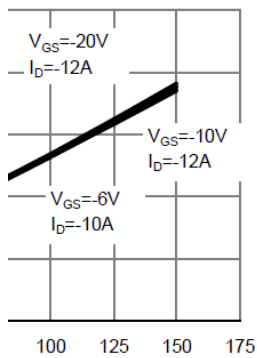


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

Figure 4: On-Resistance vs. Temperature

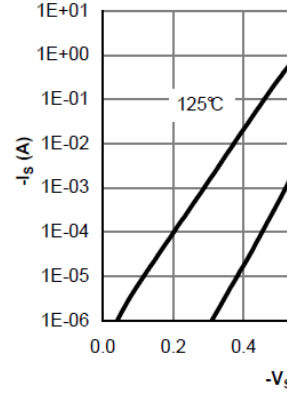
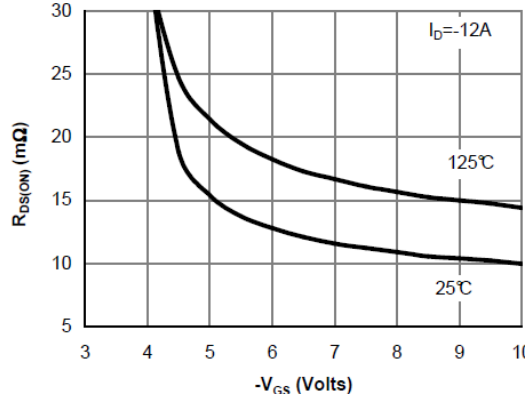
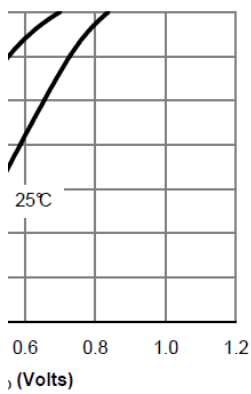


Figure 5: On-Resistance vs. Drain Current and Gate Voltage

Figure 6: On-Resistance vs. Drain Current and Gate Voltage

Figure 7: On-Resistance vs. Drain Current and Gate Voltage

TYPICAL CHARACTERISTICS

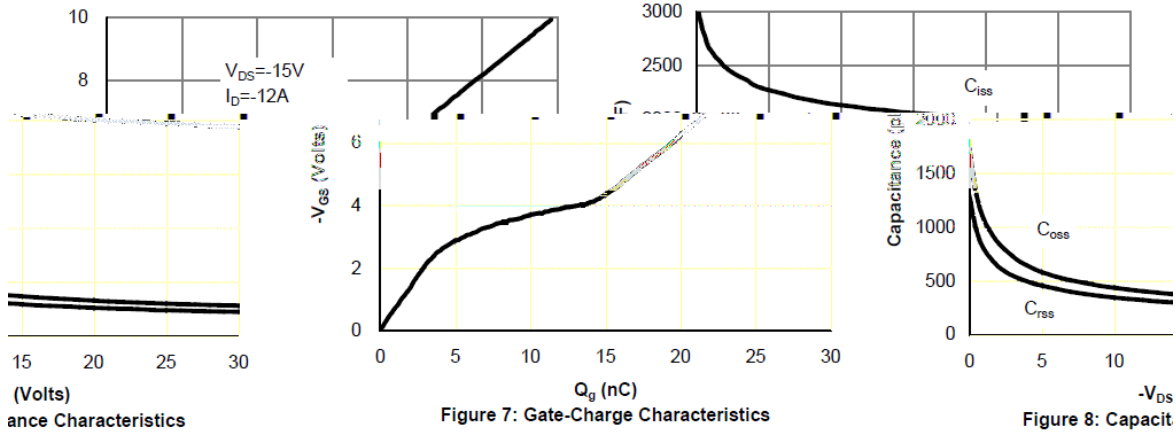


Figure 6: Forward Bias Characteristics

Figure 7: Gate-Charge Characteristics

Figure 8: Capacitance Characteristics

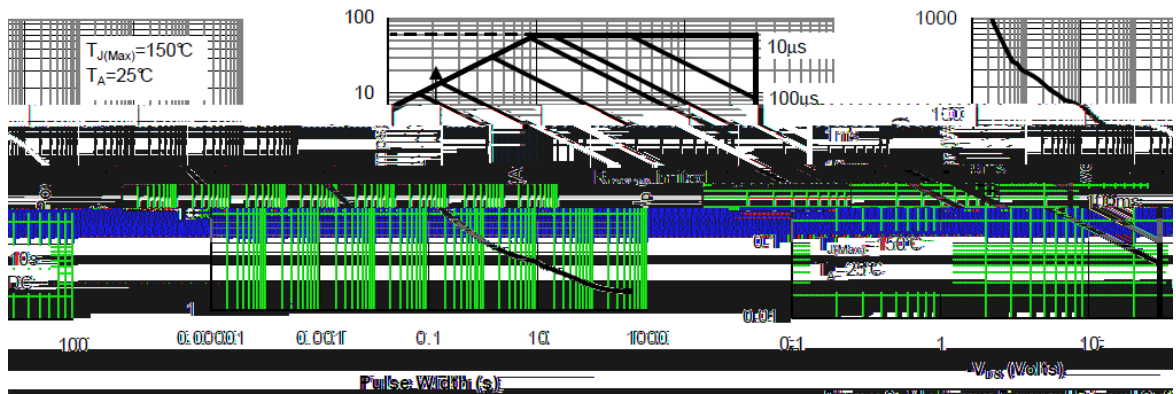


Figure 10: Single-Pulse Power Rating Junction to Ambient (Note E)

Figure 9: Maximum Forward-Biased Safe Operating Area (Note F)

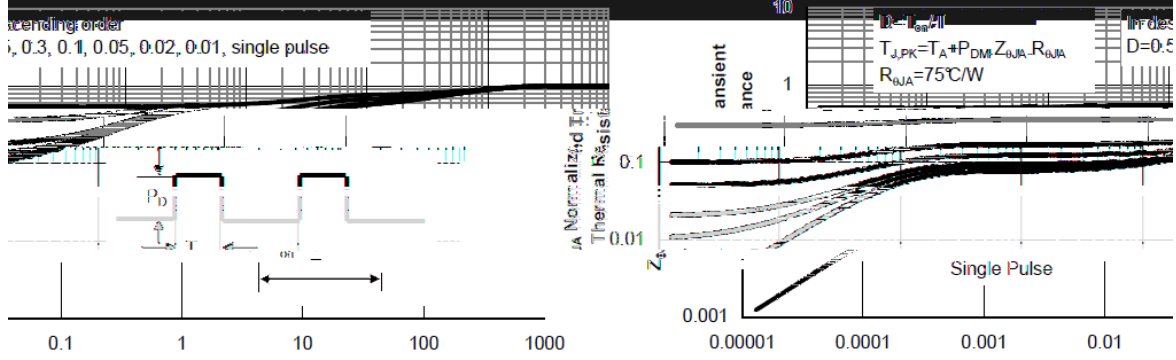
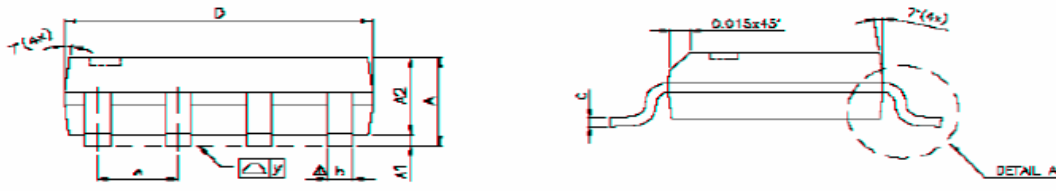
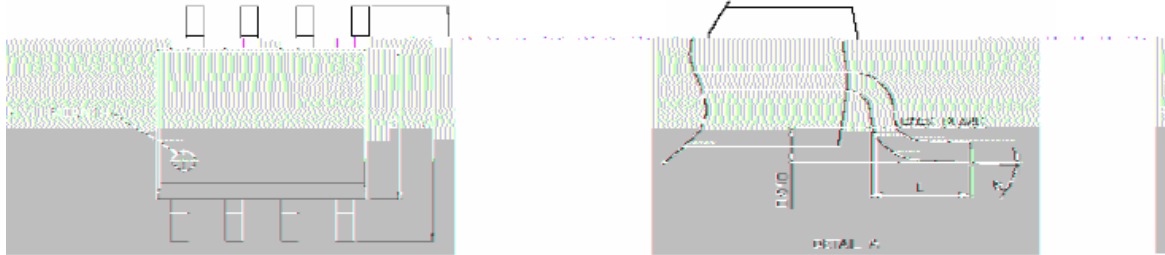


Figure 10: Single-Pulse Power Rating Junction to Ambient (Note E)

Figure 11: Normalized Maximum Thermal Impedance (Note E)

PACKAGE OUTLINE SOP-8P



SYMBOLS	DIMENSIONS IN MILLIMETERS			DIMENSIONS IN INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	1.47	1.60	1.73	0.059	0.063	0.068
A2	0.178	0.178	0.178	0.007	0.007	0.007
B	0.025	0.025	0.025	0.001	0.001	0.001
C	0.191	0.195	0.195	0.0075	0.0075	0.0075
D	4.672	4.672	4.672	0.184	0.184	0.184
E	0.150	0.154	0.157	0.006	0.006	0.006
e	—	0.050	—	—	0.002	—
L	0.015	0.028	0.030	—	0.001	—
△ y	—	—	0.005	—	—	0.0002
φ	—	—	8	—	—	8