

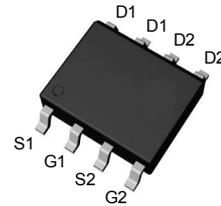
Features

- 30V/-6.5A ,
 $R_{DS(ON)} = 36m\Omega(\text{typ.}) @ V_{GS} = -10V$
 $R_{DS(ON)} = 50m\Omega(\text{typ.}) @ V_{GS} = -4.5V$
- Reliable and Rugged
- Lead Free and Green Device Available (RoHS Compliant)
- ESD Protection

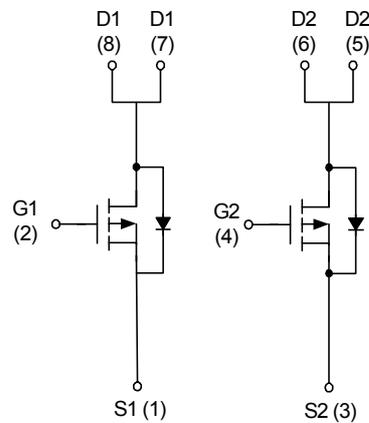
Applications

- Power Management in Notebook Computer, Portable Equipment and Battery Powered Systems

Pin Description



Top View of SOP-8



P-Channel MOSFET

ORDERING INFORMATION

Part Number	Package Code	Package	Shipping
XPX4803XS S-TRG	S	SOP8	2500EA / T&R

Absolute Maximum Ratings $(T_A = 25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Rating	Unit	
V_{DSS}	Drain-Source Voltage	-30	V	
V_{GSS}	Gate-Source Voltage	± 25		
I_D^*	Continuous Drain Current	$V_{GS} = -10\text{V}$ -6.5	A	
I_{DM}^*	Pulsed Drain Current			-20
I_S^*	Diode Continuous Forward Current	-2	A	
T_J	Maximum Junction Temperature	150	$^\circ\text{C}$	
T_{STG}	Storage Temperature Range	-55 to 150		
P_D^*	Power Dissipation for Single Operation	$T_A = 25^\circ\text{C}$	2	W
		$T_A = 100^\circ\text{C}$	0.8	
$R_{\theta JA}^*$	Thermal Resistance-Junction to Ambient	62.5	$^\circ\text{C/W}$	

Note:

*Surface Mounted on 1in^2 pad area, $t \leq 10\text{sec}$.

Electrical Characteristics $(T_A = 25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Test Condition	UT4803			Unit
			Min.	Typ.	Max.	
Static Characteristics						
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS} = 0\text{V}, I_{DS} = 250\mu\text{A}$	-30	-	-	V
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS} = -24\text{V}, V_{GS} = 0\text{V}$ $T_J = 85^\circ\text{C}$	-	-	-1	μA
			-	-	-30	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS} = V_{GS}, I_{DS} = 250\mu\text{A}$	-1	-1.5	-2.3	V
I_{GSS}	Gate Leakage Current	$V_{GS} = \pm 20\text{V}, V_{DS} = 0\text{V}$	-	-	± 100	nA
$R_{DS(ON)}^a$	Drain-Source On-state Resistance	$V_{GS} = -10\text{V}, I_{DS} = -6.5\text{A}$	-	36	45	m Ω
		$V_{GS} = -4.5\text{V}, I_{DS} = -5.6\text{A}$	-	50	65	
V_{SD}^a	Diode Forward Voltage	$I_{SD} = -1.7\text{A}, V_{GS} = 0\text{V}$	-	-0.8	-1.3	V
Gate Charge Characteristics^b						
Q_g	Total Gate Charge	$V_{DS} = -15\text{V}, V_{GS} = -10\text{V},$ $I_{DS} = -4.9\text{A}$	-	11.6	16	nC
Q_{gs}	Gate-Source Charge		-	1.3	-	
Q_{gd}	Gate-Drain Charge		-	2.5	-	

Electrical Characteristics (Cont.) (T_A = 25°C unless otherwise noted)

Symbol	Parameter	Test Condition	UT4803			Unit
			Min.	Typ.	Max.	
Dynamic Characteristics^b						
R _G	Gate Resistance	V _{GS} =0V, V _{DS} =0V, F=1MHz	-	8	-	Ω
C _{iss}	Input Capacitance	V _{GS} =0V, V _{DS} =-15V, Frequency=1.0MHz	-	625	-	pF
C _{oss}	Output Capacitance		-	100	-	
C _{rss}	Reverse Transfer Capacitance		-	60	-	
t _{d(ON)}	Turn-on Delay Time	V _{DD} =-15V, R _L =15Ω, I _{DS} =-1A, V _{GEN} =-10V, R _G =6Ω	-	6	12	ns
t _r	Turn-on Rise Time		-	12	23	
t _{d(OFF)}	Turn-off Delay Time		-	25	46	
t _f	Turn-off Fall Time		-	6	12	
t _{rr}	Reverse Recovery Time	I _{DS} =-4.9A, di _{SD} /dt=100A/μs	-	14	-	ns
Q _{rr}	Reverse Recovery Charge		-	5	-	nC

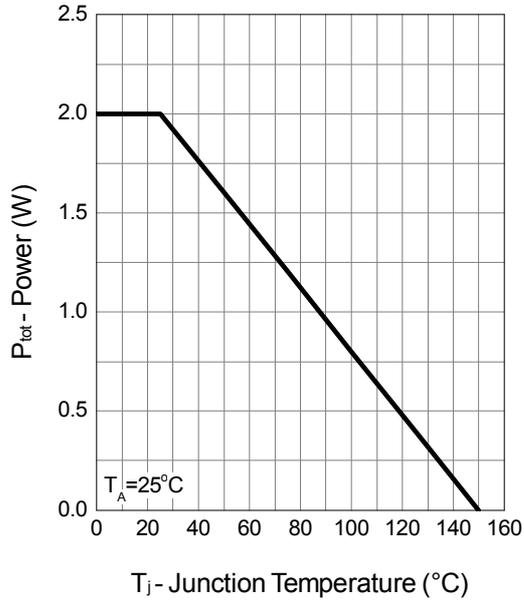
Notes:

a : Pulse test ; pulse width≤300μs, duty cycle≤2%.

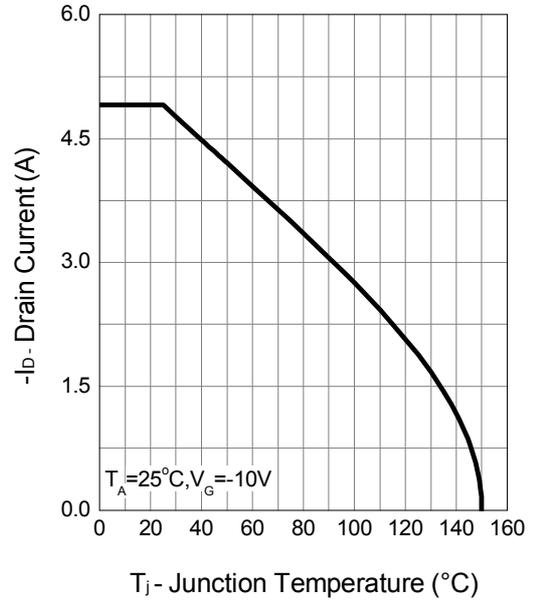
b : Guaranteed by design, not subject to production testing.

Typical Characteristics

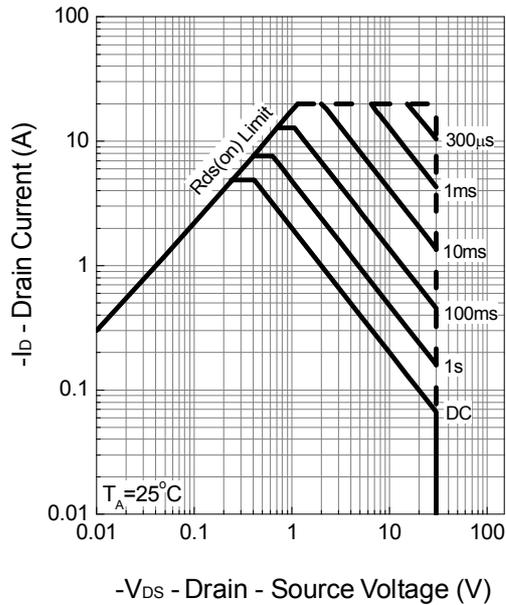
Power Dissipation



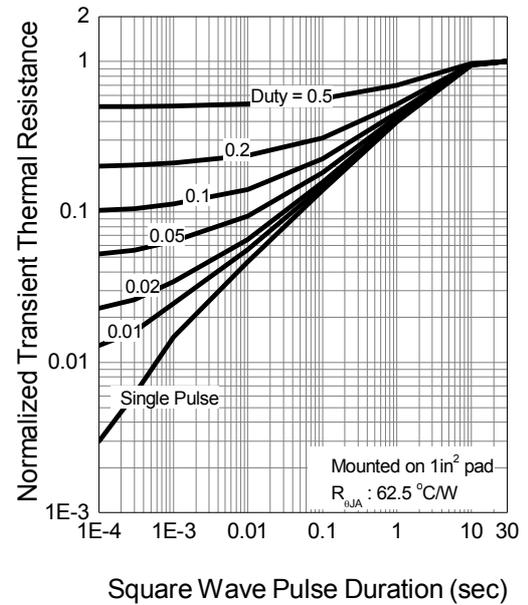
Drain Current



Safe Operation Area

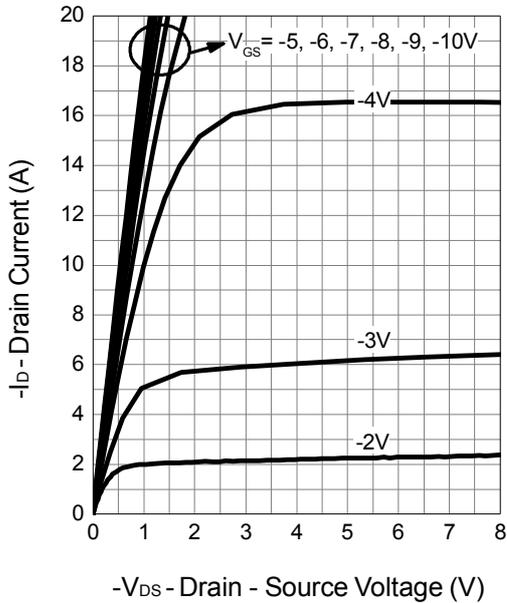


Thermal Transient Impedance

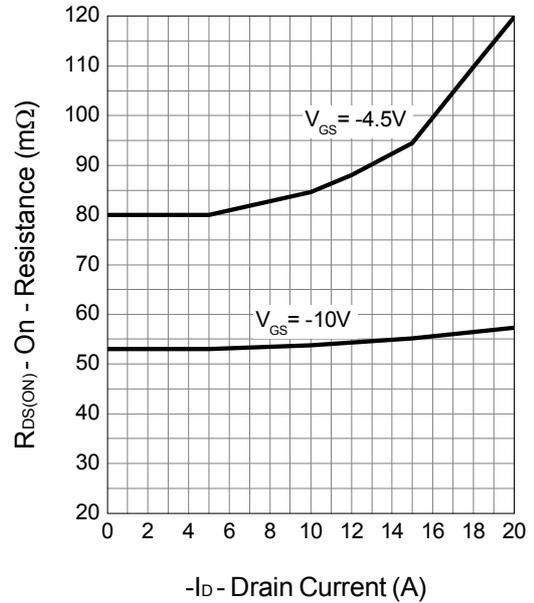


Typical Characteristics (Cont.)

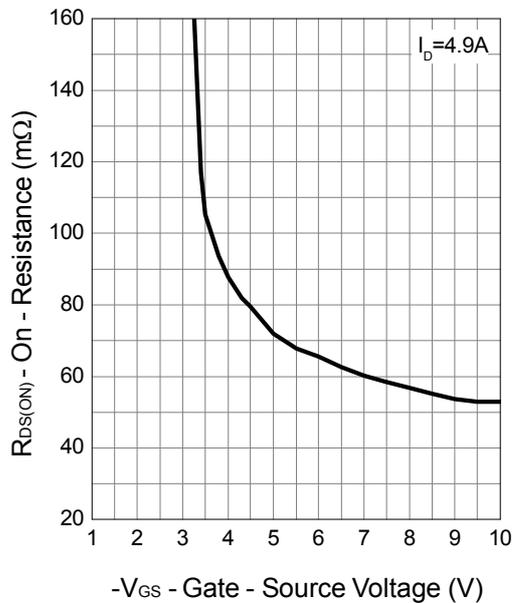
Output Characteristics



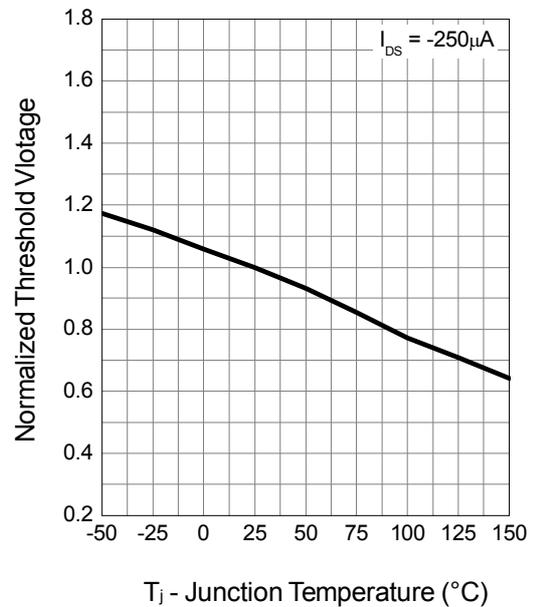
Drain-Source On Resistance



Drain-Source On Resistance

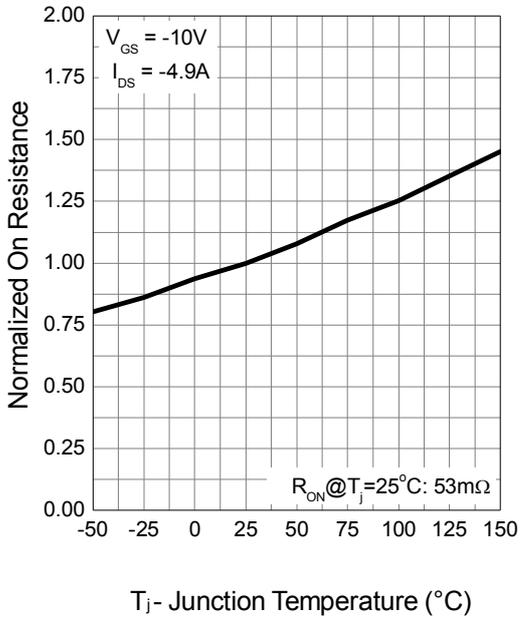


Gate Threshold Voltage

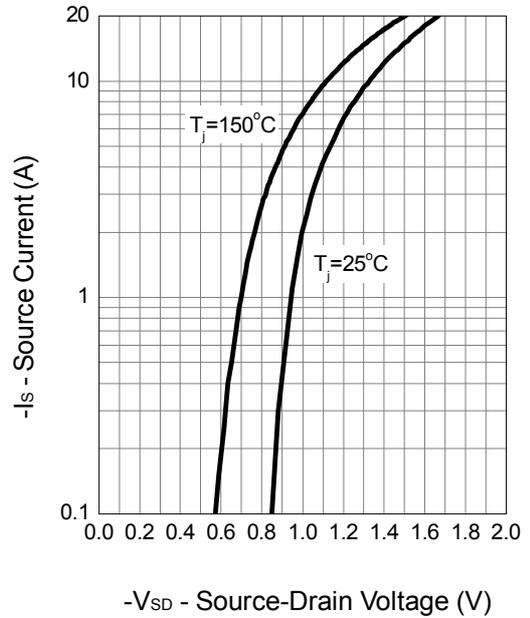


Typical Characteristics (Cont.)

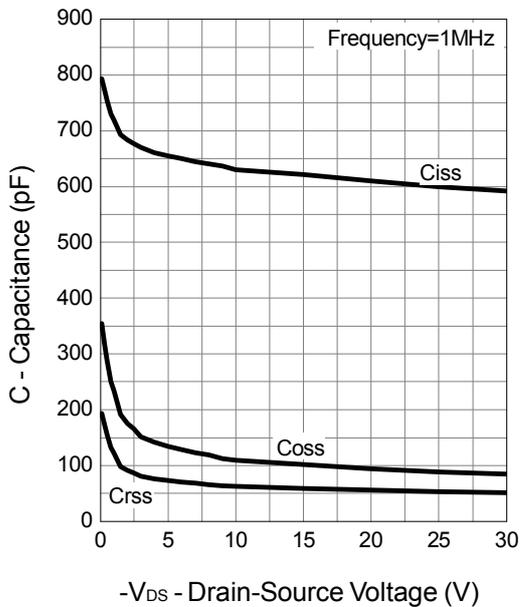
Drain-Source On Resistance



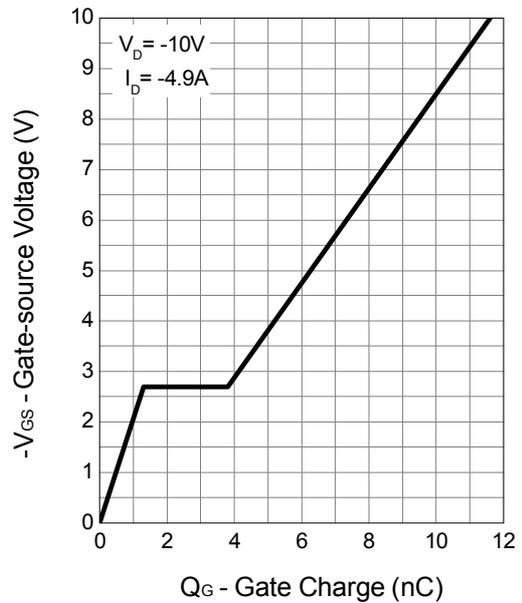
Source-Drain Diode Forward



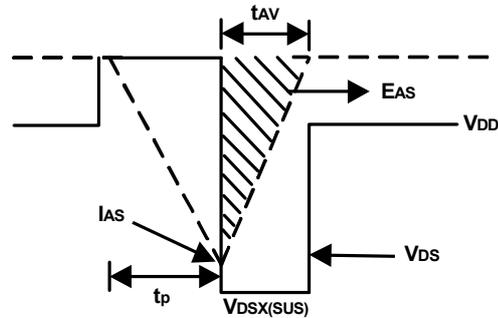
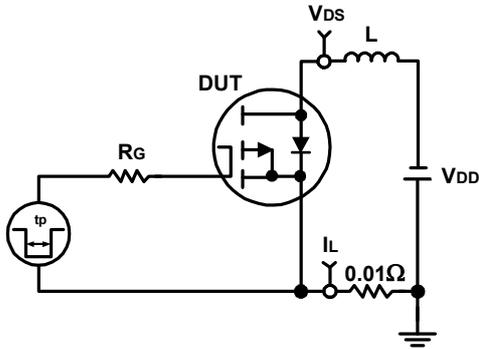
Capacitance



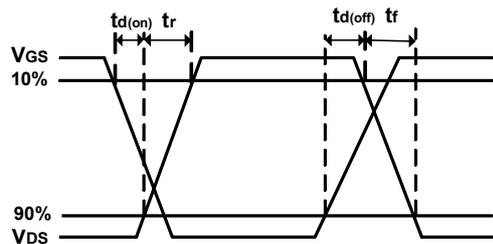
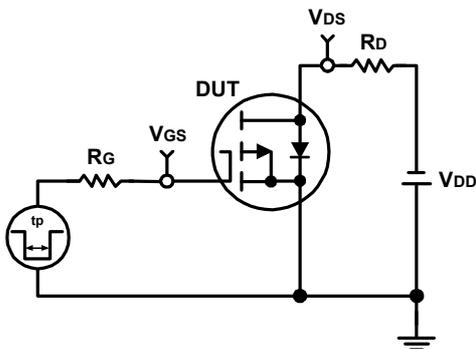
Gate Charge



Avalanche Test Circuit and Waveforms

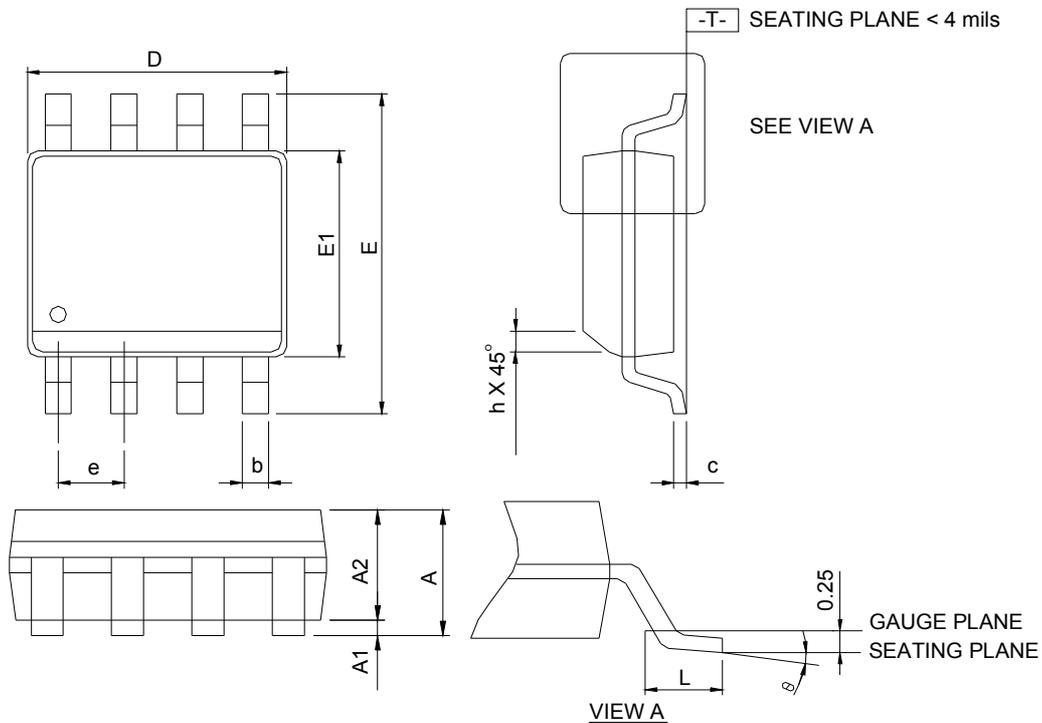


Switching Time Test Circuit and Waveforms



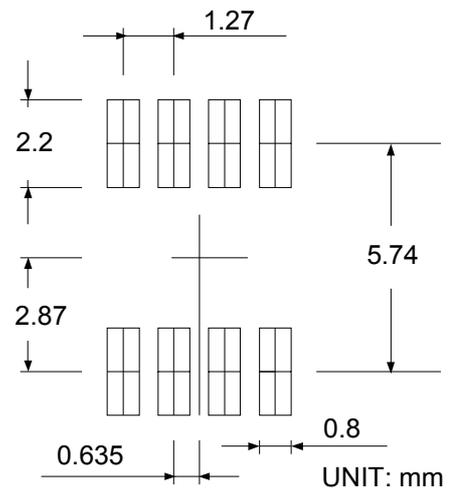
Package Information

SOP-8



DIMENSIONS	SOP-8			
	MILLIMETERS		INCHES	
	MIN.	MAX.	MIN.	MAX.
A	-	1.75	-	0.069
A1	0.10	0.25	0.004	0.010
A2	1.25	-	0.049	-
b	0.31	0.51	0.012	0.020
c	0.17	0.25	0.007	0.010
D	4.80	5.00	0.189	0.197
E	5.80	6.20	0.228	0.244
E1	3.80	4.00	0.150	0.157
e	1.27 BSC		0.050 BSC	
h	0.25	0.50	0.010	0.020
L	0.40	1.27	0.016	0.050
θ	0°	8°	0°	8°

RECOMMENDED LAND PATTERN



- Note: 1. Follow JEDEC MS-012 AA.
 2. Dimension "D" does not include mold flash, protrusions or gate burrs. Mold flash, protrusion or gate burrs shall not exceed 6 mil per side.
 3. Dimension "E" does not include inter-lead flash or protrusions. Inter-lead flash and protrusions shall not exceed 10 mil per side.