

**Features**

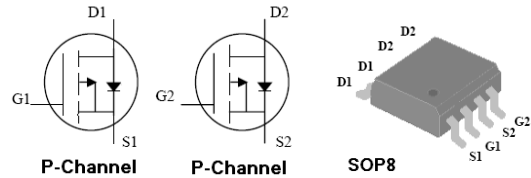
- Low  $R_{DS(on)}$  @  $V_{GS}=-5V$
- 5V Logic Level Control
- Dual P-Channel SOP8 Package
- Pb-Free, RoHS Compliant

Key Items	PMOS	Unit
BVDSS	-30	V
ID	-5.8	A
$R_{DS(on)}$ @ $V_{GS}=-4.5V$	50	mΩ
$R_{DS(on)}$ @ $v_{GS}=-2.5V$	70	mΩ

**Applications**

The PTS4803 uses advanced trench technology to provide excellent RDS(ON) with low gate charge.

This device is suitable for use as a load switch or in PWM applications, optimized for Power Management applications for Portable Products, such as H-bridge, Inverters Car Charger and Others



**Order Information**

Product	Package	Marking	Packing	Min Unit Quantity
PTS4803	SOP8	PTS4803	3000PCS/Reel	3000PCS

**Absolute Maximum Ratings**

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

Symbol	Parameter	Rating	Unit
<b>Common Ratings (TC=25°C Unless Otherwise Noted)</b>			
$V_{GS}$	Gate-Source Voltage	±12	V
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	-30	V
$T_J$	Maximum Junction Temperature	175	°C
$T_{STG}$	Storage Temperature Range	-50 to 150	°C
$I_S$	Diode Continuous Forward Current <sup>①</sup>	$T_C=25^\circ C$ -5.8	A
<b>Mounted on Large Heat Sink</b>			
$I_{DM}$	Pulse Drain Current Tested <sup>②</sup>	$T_C=25^\circ C$ -22	A
$I_D$	Continuous Drain Current( $V_{GS}=10V$ )	$T_C=25^\circ C$ -5.8	A
		$T_C=100^\circ C$ -5	
$P_D$	Maximum Power Dissipation	$T_C=25^\circ C$ 2	W
$R_{\theta JA}$	Thermal Resistance Junction-Ambient	89	°C/W

Symbol	Parameter	Condition	Min	Typ	Max	Unit
<b>Static Electrical Characteristics @ TJ = 25°C (unless otherwise stated)</b>						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=-250\mu A$	-30	--	--	V
$I_{DSS}$	Zero Gate Voltage Drain Current ( $T_C=25^\circ C$ )	$V_{DS}=-30V, V_{GS}=0V$	--	--	1	$\mu A$
	Zero Gate Voltage Drain Current ( $T_C=125^\circ C$ )	$V_{DS}=-30V, V_{GS}=0V$	--	--	100	$\mu A$
$I_{GSS}$	Gate-Body Leakage Current	$V_{GS}=\pm 12V, V_{DS}=0V$	--	--	$\pm 100$	nA
$V_{GS(TH)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=-250\mu A$	-0.6	-0.9	-1.5	V
$R_{DS(ON)}$	Drain-Source On-State Resistance	$V_{GS}=-4.5V, I_D=-5A$	--	50	60	m $\Omega$
$R_{DS(ON)}$	Drain-Source On-State Resistance	$V_{GS}=-2.5V, I_D=-3A$	--	70	85	m $\Omega$
<b>Dynamic Electrical Characteristics @ TJ = 25°C (unless otherwise stated)</b>						
$C_{iss}$	Input Capacitance	$V_{DS}=-15V, V_{GS}=0V,$ $f=1MHz$	--	480	--	pF
$C_{oss}$	Output Capacitance		--	90	--	pF
$C_{rss}$	Reverse Transfer Capacitance		--	50	--	pF
$Q_g$	Total Gate Charge	$V_{DS}=-15V, I_D=-3A,$ $V_{GS}=-4.5V$	--	12	--	nC
$Q_{gs}$	Gate-Source Charge		--	3.5	--	nC
$Q_{gd}$	Gate-Drain Charge		--	2.8	--	nC
<b>Switching Characteristics</b>						
$t_{d(on)}$	Turn-on Delay Time	$V_{DD}=-20V,$ $I_D=-6A,$ $R_G=3.3\Omega,$ $V_{GS}=-4.5V$	--	8	--	ns
$t_r$	Turn-on Rise Time		--	5	--	nS
$t_{d(off)}$	Turn-Off Delay Time		--	22	--	nS
$t_f$	Turn-Off Fall Time		--	8.5	--	nS
<b>Source- Drain Diode Characteristics</b>						
$I_{SD}$	Source-drain current(Body Diode)	$T_C=25^\circ C$	-3	--	--	A
$V_{SD}$	Forward on voltage	$T_j=25^\circ C, I_{SD}=-4A$ $V_{GS}=0V$	--	-0.8	-1.2	V

Notes:

- ① Pulse test ; Pulse width $\leq 300\mu s$ , duty cycle $\leq 2\%$ .
- ② Pulse width limited by maximum allowable junction temperature.

P-Channel Typical Characteristics

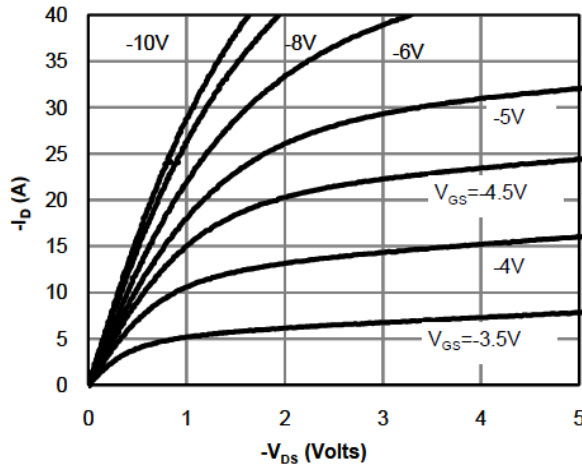


Fig 1: On-Region Characteristics

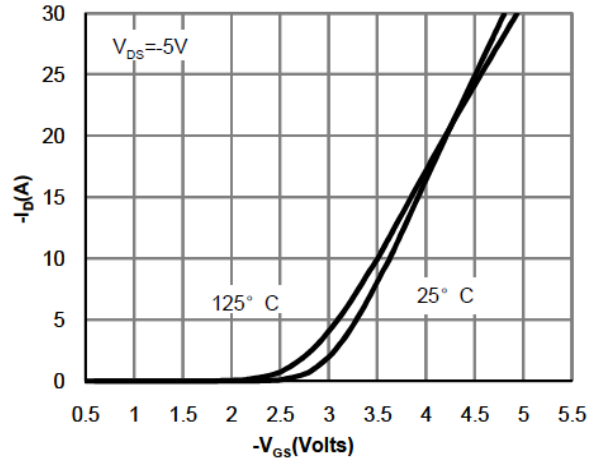


Figure 2: Transfer Characteristics

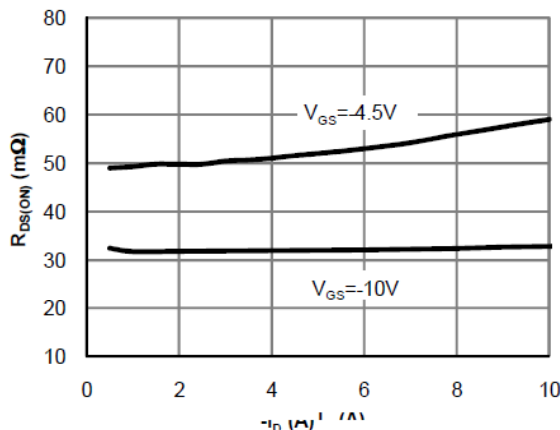


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

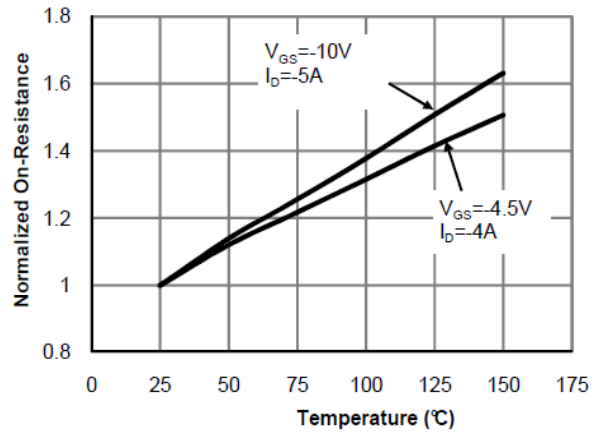


Figure 4: On-Resistance vs. Junction Temperature

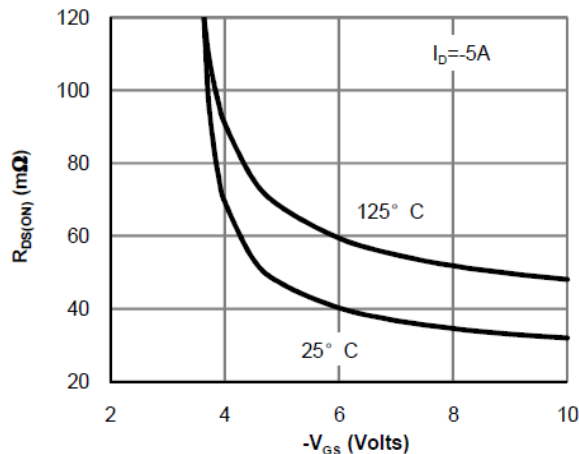


Figure 5: On-Resistance vs. Gate-Source Voltage

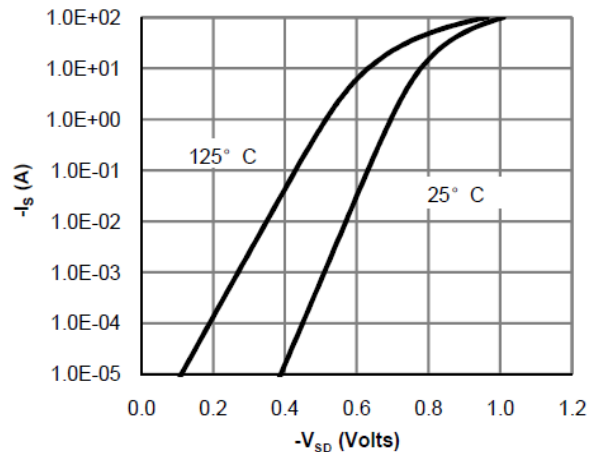


Figure 6: Body-Diode Characteristics

**P-Channel Typical Characteristics**

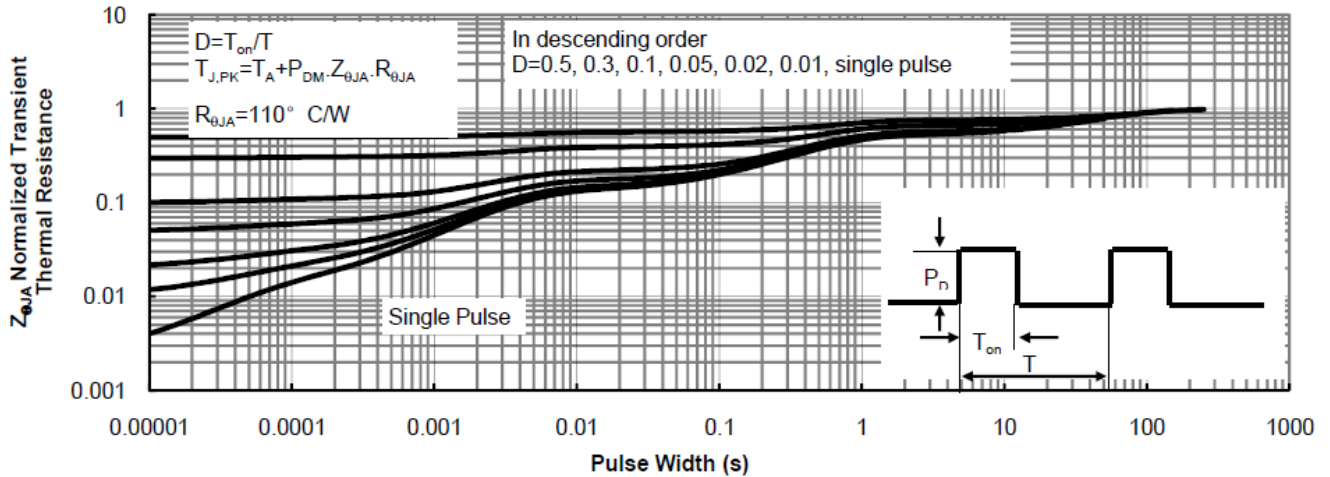


Figure 12: Normalized Maximum Transient Thermal Impedance

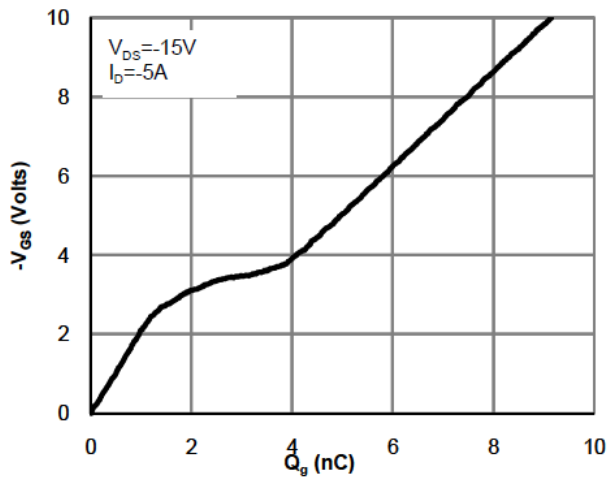


Figure 7: Gate-Charge Characteristics

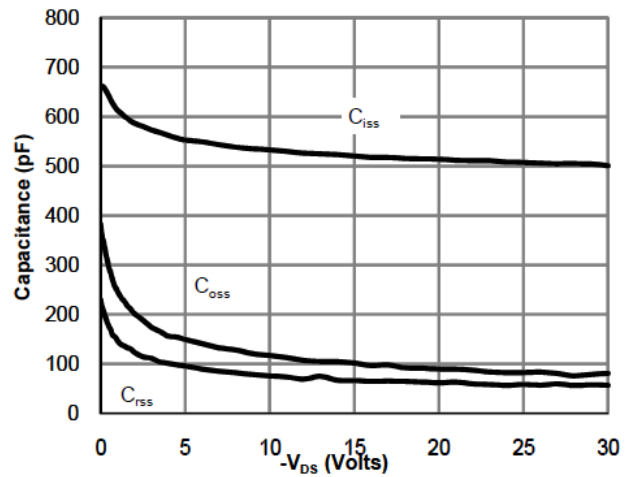


Figure 8: Capacitance Characteristics

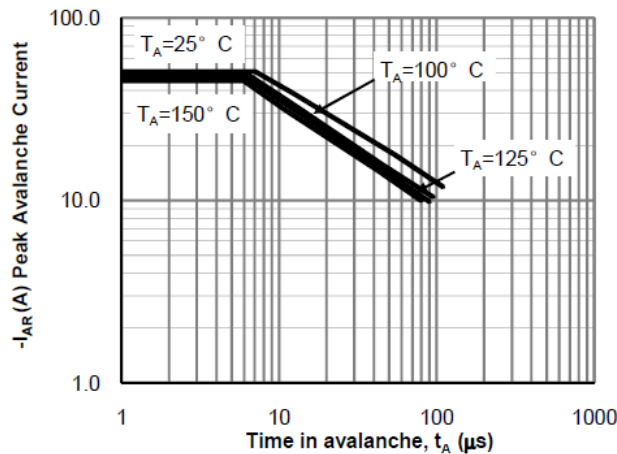


Figure 9: Single Pulse Avalanche capability

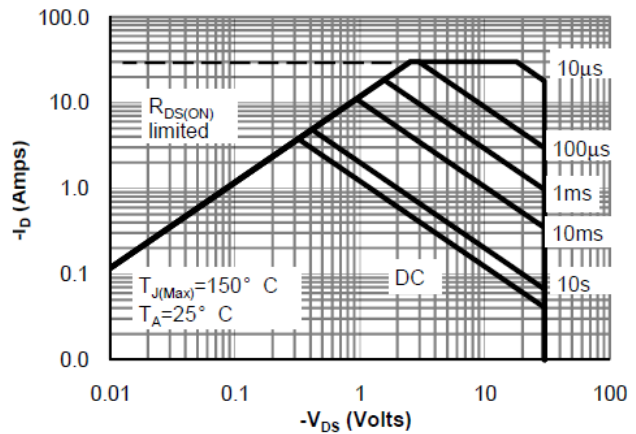
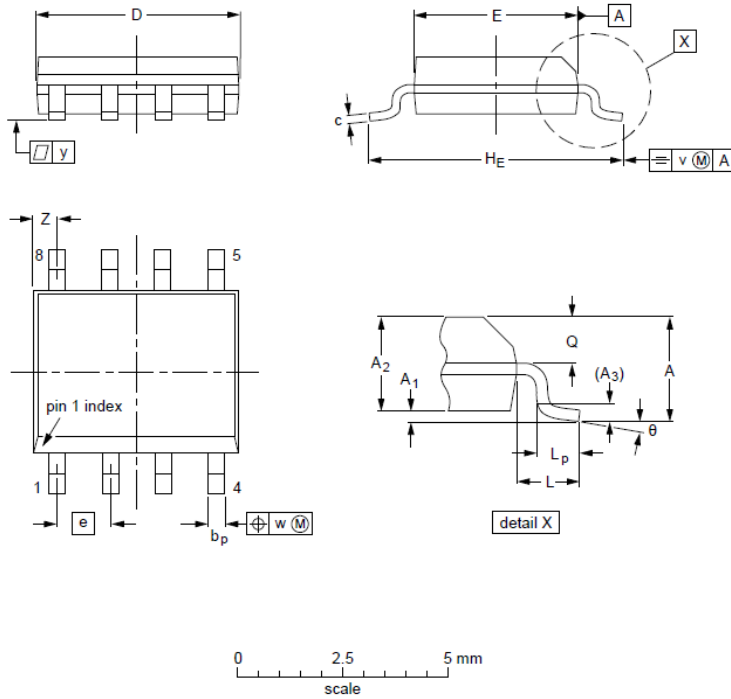


Figure 10: Maximum Forward Biased Safe Operating Area

**Package Out Line Dimensions**



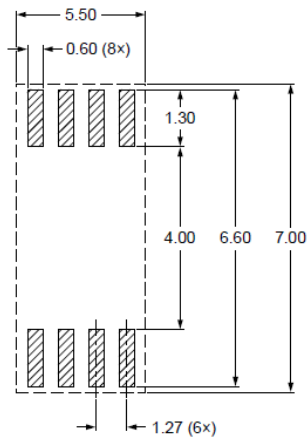
**DIMENSIONS (inch dimensions are derived from the original mm dimensions)**

UNIT	A max.	A <sub>1</sub>	A <sub>2</sub>	A <sub>3</sub>	b <sub>p</sub>	c	D <sup>(1)</sup>	E <sup>(2)</sup>	e	H <sub>E</sub>	L	L <sub>p</sub>	Q	v	w	y	Z <sup>(1)</sup>	θ
mm	1.75	0.25 0.10	1.45 1.25	0.25	0.49 0.36	0.25 0.19	5.0 4.8	4.0 3.8	1.27	6.2 5.8	1.05	1.0 0.4	0.7 0.6	0.25	0.25	0.1	0.7 0.3	8° 0°
inches	0.069	0.010 0.004	0.057 0.049	0.01	0.019 0.014	0.0100 0.0075	0.20 0.19	0.16 0.15	0.05	0.244 0.228	0.041	0.039 0.016	0.028 0.024	0.01	0.01	0.004	0.028 0.012	

**Notes**

1. Plastic or metal protrusions of 0.15 mm (0.006 inch) maximum per side are not included.
2. Plastic or metal protrusions of 0.25 mm (0.01 inch) maximum per side are not included.

**Reflow soldering footprint for SOP8**



▨ solder lands  
 [ ] occupied area

placement accuracy ± 0.25

Dimensions in mm

**Customer Service**

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