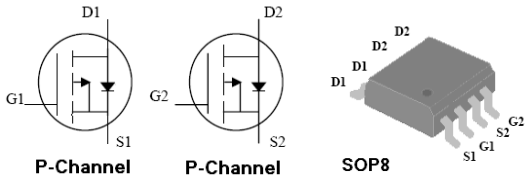
## Features

- *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 |
| RDSON1@Vgs=-4.5V | 50 | mΩ |
| RDSON2@vgs=-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 *applicati*ons for Portable Products, such as H-bridge, Inverters Car C*harger 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 |
|---|---|---|---|---|
| **Common Ratings (TC=25°C Unless Otherwise Noted)** | | | | |
| $V_{GS}$ | 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 Current① | $T_C$=25°C | -5.8 | A |
| Mounted on Large Heat Sink | | | | |
| $I_{DM}$ | Pulse Drain Current Tested② | $T_C$=25°C | -22 | A |
| $I_D$ | Continuous Drain Current($V_{GS}$=10V) | $T_C$=25°C | -5.8 | A |
| | | $T_C$=100°C | -5 | |
| $P_D$ | Maximum Power Dissipation | $T_C$=25°C | 2 | W |
| $R_{\theta JA}$ | Thermal Resistance Junction-Ambient | | 89 | °C/W |

| Symbol | Parameter | Condition | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| **Static Electrical Characteristics @ TJ = 25°C (unless otherwise stated)** | | | | | | |
| $V_{(BR)DSS}$ | Drain-Source Breakdown Voltage | $V_{GS}$=0V $I_D$=-250μA | -30 | -- | -- | V |
| $I_{DSS}$ | Zero Gate Voltage Drain Current (Tc=25℃) | $V_{DS}$=-30V,$V_{GS}$=0V | -- | -- | 1 | μA |
| | Zero Gate Voltage Drain Current (Tc=125℃) | $V_{DS}$=-30V,$V_{GS}$=0V | -- | -- | 100 | μA |
| $I_{GSS}$ | Gate-Body Leakage Current | $V_{GS}$=±12V,$V_{DS}$=0V | -- | -- | ±100 | nA |
| $V_{GS(TH)}$ | Gate Threshold Voltage | $V_{DS}$=$V_{GS}$,$I_D$=-250μA | -0.6 | -0.9 | -1.5 | V |
| $R_{DS(ON)}$ | Drain-Source On-State Resistance | $V_{GS}$=-4.5V,$I_D$=-5A | -- | 50 | 60 | mΩ |
| $R_{DS(ON)}$ | Drain-Source On-State Resistance | $V_{GS}$=-2.5V,$I_D$=-3A | -- | 70 | 85 | mΩ |
| **Dynamic Electrical Characteristics @ TJ = 25°C (unless otherwise stated)** | | | | | | |
| $C_{iss}$ | Input Capacitance | $V_{DS}$=-15$V_{GS}$=0V, f=1MHz | -- | 480 | -- | pF |
| $C_{oss}$ | Output Capacitance | | -- | 90 | -- | pF |
| $C_{rss}$ | Reverse Transfer Capacitance | | -- | 50 | -- | pF |
| $Q_g$ | Total Gate Charge | $V_{DS}$=-15$I_D$=-3A, $V_{GS}$=-4.5V | -- | 12 | -- | nC |
| $Q_{gs}$ | Gate-Source Charge | | -- | 3.5 | -- | nC |
| $Q_{gd}$ | Gate-Drain Charge | | -- | 2.8 | -- | nC |
| **Switching Characteristics** | | | | | | |
| $t_{d(on)}$ | Turn-on Delay Time | $V_{DD}$=-20V, $I_D$=-6A, $R_G$=3.3Ω, $V_{GS}$=-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 |
| **Source- Drain Diode Characteristics** | | | | | | |
| $I_{SD}$ | Source-drain current(Body Diode) | $T_c$=25℃ | -3 | -- | | A |
| $V_{SD}$ | Forward on voltage | $T_j$=25℃,$I_{SD}$=-4A $V_{GS}$=0V | -- | -0.8 | -1.2 | V |

Notes:

① Pulse test ; Pulse width≤300μs, duty cycle≤2%.

② Pulse width limited by maximum allowable junction temperature.

P-Channel Typical **Characteristics**

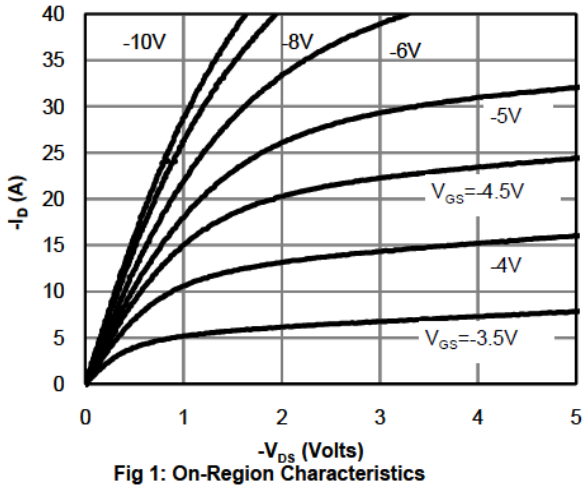



Fig 1: On-Region Characteristics

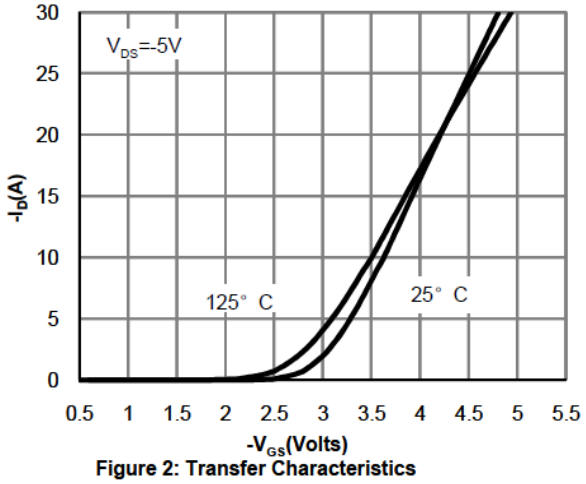



Figure 2: Transfer Characteristics

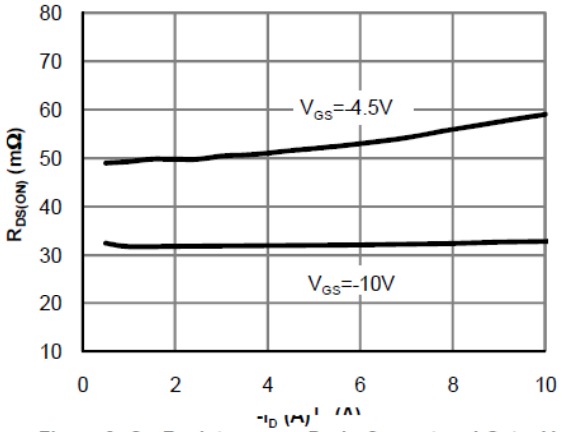



Figure 3: On-Resistance vs. Drain Current and Gate Voltage

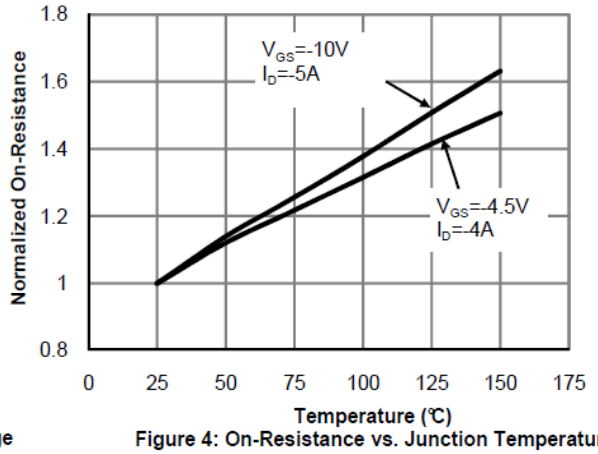



Figure 4: On-Resistance vs. Junction Temperature

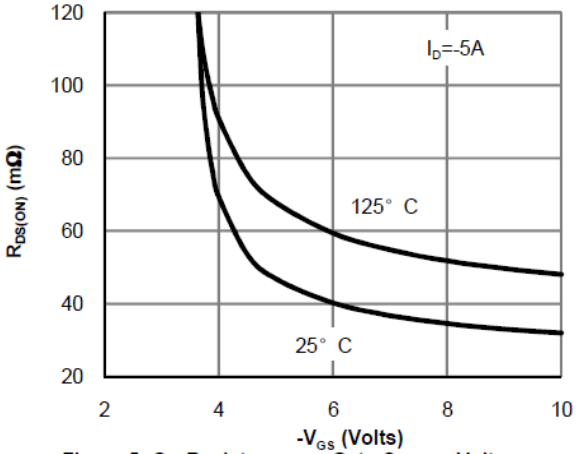



Figure 5: On-Resistance vs. Gate-Source Voltage

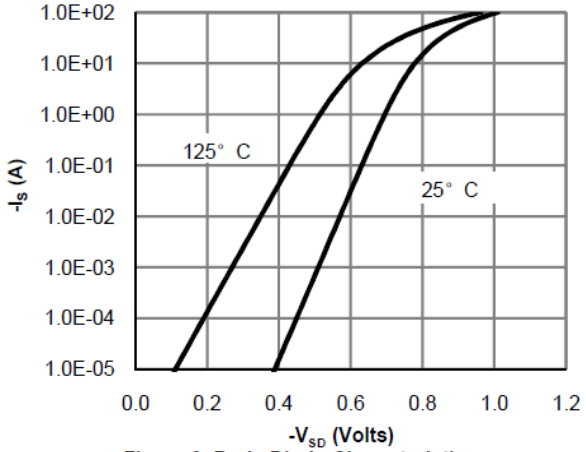



Figure 6: Body-Diode Characteristics

## P-Channel Typical Characteristics

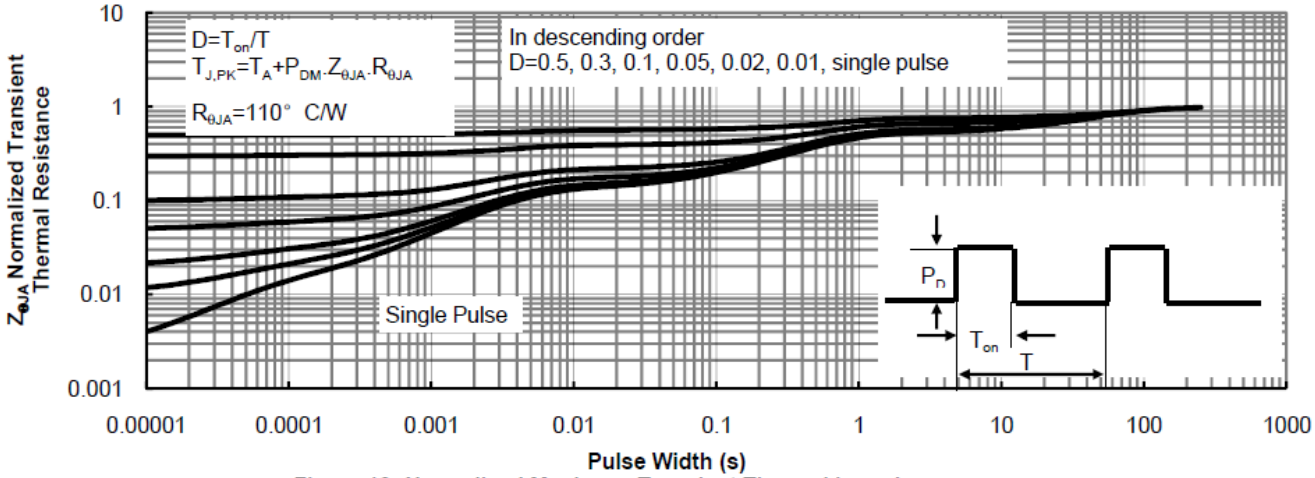



Figure 12: Normalized Maximum Transient Thermal Impedance

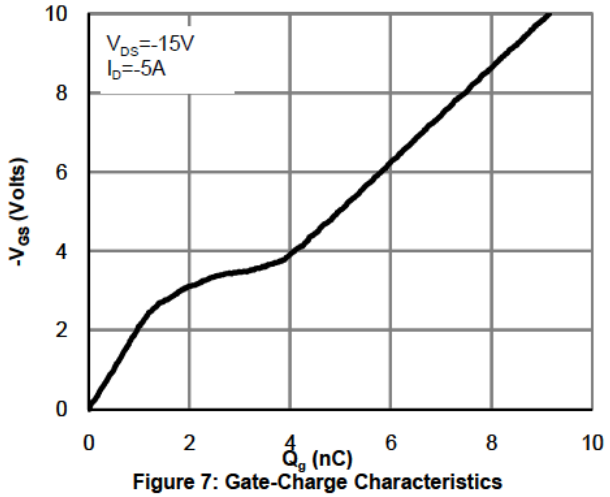



Figure 7: Gate-Charge Characteristics

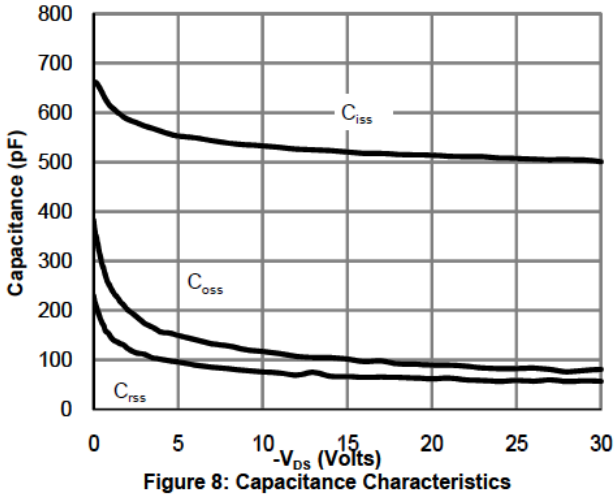



Figure 8: Capacitance Characteristics

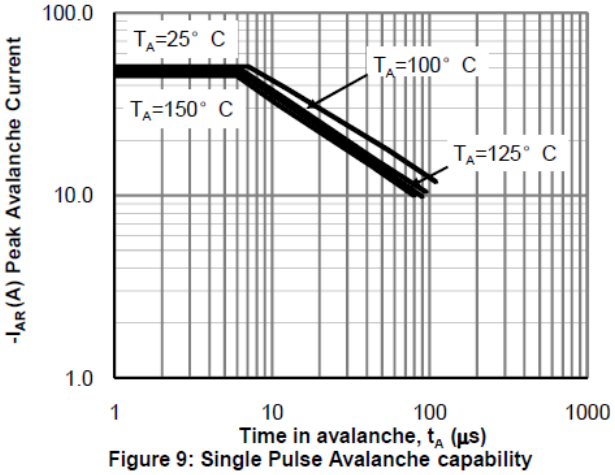



Figure 9: Single Pulse Avalanche capability

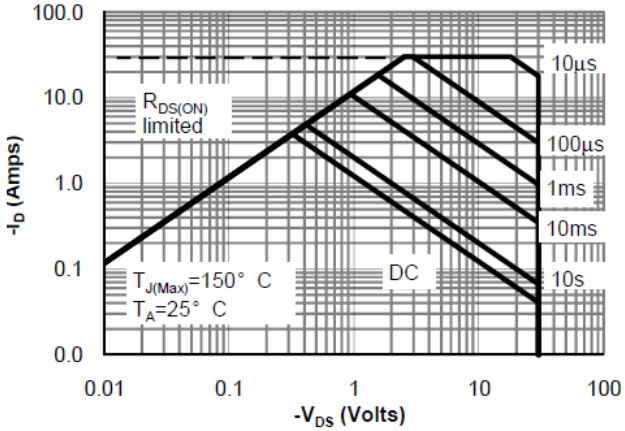
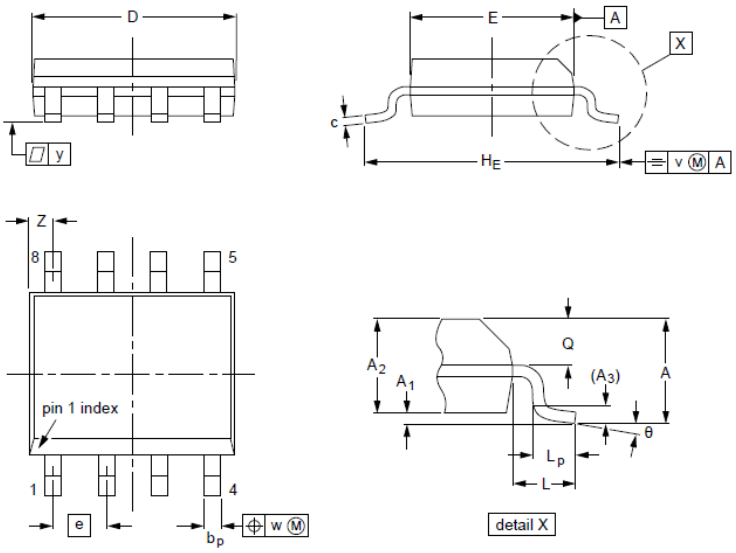
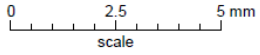



Figure 10: Maximum Forward Biased Safe Operating Area

## Package Out Line Dimensions



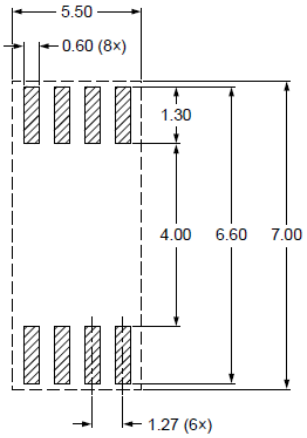

**DIMENSIONS** (inch dimensions are derived from the original mm dimensions)

| UNIT | A max. | $A_1$ | $A_2$ | $A_3$ | $b_p$ | c | $D^{(1)}$ | $E^{(2)}$ | e | $H_E$ | L | $L_p$ | Q | v | w | y | $Z^{(1)}$ | θ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| mm | 1.75 | 0.25<br>0.10 | 1.45<br>1.25 | 0.25 | 0.49<br>0.36 | 0.25<br>0.19 | 5.0<br>4.8 | 4.0<br>3.8 | 1.27 | 6.2<br>5.8 | 1.05 | 1.0<br>0.4 | 0.7<br>0.6 | 0.25 | 0.25 | 0.1 | 0.7<br>0.3 | 8°<br>0° |
| inches | 0.069 | 0.010<br>0.004 | 0.057<br>0.049 | 0.01 | 0.019<br>0.014 | 0.0100<br>0.0075 | 0.20<br>0.19 | 0.16<br>0.15 | 0.05 | 0.244<br>0.228 | 0.041 | 0.039<br>0.016 | 0.028<br>0.024 | 0.01 | 0.01 | 0.004 | 0.028<br>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

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