

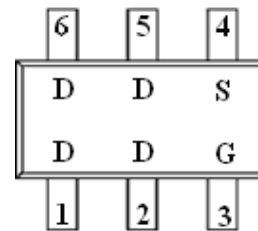
➤ General Description

This PAP2611H P-Channel enhancement mode power field effect transistor is the high density trench technology and this advanced technology can provide excellent $R_{ds(On)}$ performance and efficiency for power switching and load switching application., this device also comply with the RoHS and Green Product requirement with full function reliability approved.

➤ Feature

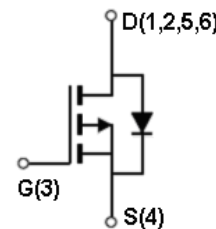
- Low Offset (Error) Voltage
- Low-Voltage Operation
- High-Speed Circuits
- Low Battery Voltage Operation
- SOT-363 package design

➤ SOT-363



➤ Application

- Drivers: Relays, Solenoids, Lamps, Hammers, Displays, Memories
- Battery Operated Systems
- Load/Power Switching Smart Phones, Pagers
- PA Switch
- Level Switch



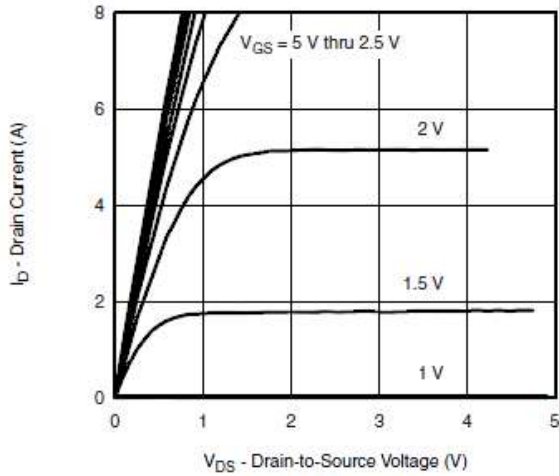
➤ Absolute Maximum Ratings

| Parameter | Symbol | Rating | Unit |
|---|-----------------|------------------|--------------|
| Drain-Source Voltage | V_{DSS} | -20 | V |
| Gate -Source Voltage | V_{GSS} | ± 12 | V |
| Continuous Drain Current($T_J=150^\circ C$) | I_D | $T_A=25^\circ C$ | -3.0 |
| | | $T_A=70^\circ C$ | -2.0 |
| Pulsed Drain Current | I_{DM} | -8 | A |
| Continuous Source Current(Diode Conduction) | I_S | -1.4 | A |
| Power Dissipation | P_D | $T_A=25^\circ C$ | 1.5 |
| | | $T_A=70^\circ C$ | 0.8 |
| Operating Junction Temperature | T_J | 150 | $^\circ C$ |
| Storage Temperature Range | T_{STG} | -55/150 | $^\circ C$ |
| Thermal Resistance-Junction to Ambient | $R_{\theta JA}$ | 120 | $^\circ C/W$ |

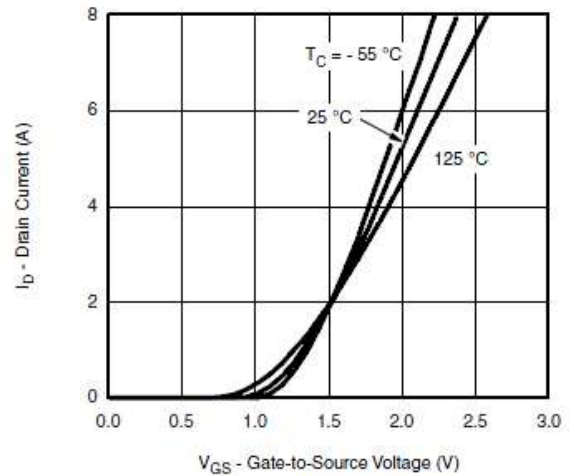
➤ **Electrical Characteristics ($T_A=25^\circ C$ Unless otherwise noted)**

| Parameter | Symbol | Conditions | Min. | Typ | Max. | Unit |
|---------------------------------|---------------|---|------|-------|-----------|------------|
| Static | | | | | | |
| Drain-Source Breakdown Voltage | $V_{(BR)DSS}$ | $V_{GS}=0V, I_D=-250\mu A$ | -20 | | | V |
| Gate Threshold Voltage | $V_{GS(th)}$ | $V_{DS}=V_{GS}, I_D=-250\mu A$ | -0.5 | -0.7 | -1.0 | |
| Gate Leakage Current | I_{GSS} | $V_{DS}=0V, V_{GS}=\pm 12V$ | | | ± 100 | nA |
| Zero Gate Voltage Drain Current | I_{DSS} | $V_{DS}=-16V, V_{GS}=0V$ | | | -1 | uA |
| | | $V_{DS}=-16V, V_{GS}=0V$ $T_J=85^\circ C$ | | | -30 | |
| On-State Drain Current | $I_{D(on)}$ | $V_{DS} \leq -5V, V_{GS}=-4.5V$ | -4 | | | A |
| Drain-Source On-Resistance | $R_{DS(on)}$ | $V_{GS}=-4.5V, I_D=-3.0A$ | | 95 | 110 | m Ω |
| | | $V_{GS}=-2.5V, I_D=-2.4A$ | | 115 | 135 | |
| | | $V_{GS}=-1.8V, I_D=-2.0A$ | | 155 | 180 | |
| Forward Transconductance | g_{FS} | $V_{DS}=-5V, I_D=-2.8A$ | | 6.5 | | S |
| Diode Forward Voltage | V_{SD} | $I_S=-1.25A, V_{GS}=0V$ | | -0.75 | -1.3 | V |
| Dynamic | | | | | | |
| Total Gate Charge | Q_g | $V_{DS}=-10V, V_{GS}=-4.5V$ $I_D \equiv -2.9A$ | | 5.8 | 10 | nC |
| Gate-Source Charge | Q_{gs} | | | 1.1 | | |
| Gate-Drain Charge | Q_{gd} | | | 1.1 | | |
| Input Capacitance | C_{iss} | $V_{DS}=-10V, V_{GS}=0V$ $f=1MHz$ | | 550 | 750 | pF |
| Output Capacitance | C_{oss} | | | 90 | | |
| Reverse Transfer Capacitance | C_{rss} | | | 70 | | |
| Turn-On Time | $t_{d(on)}$ | $V_{DD}=-10V, R_L=10\Omega$ $I_D \equiv -1.0A, V_{GEN}=-4.5V$ $R_G=6\Omega$ | | 1.0 | 2.0 | us |
| | t_r | | | 2.0 | 3.0 | |
| Turn-Off Time | $t_{d(off)}$ | | | 4.0 | 6.0 | |
| | t_f | | | 4.0 | 6.0 | |

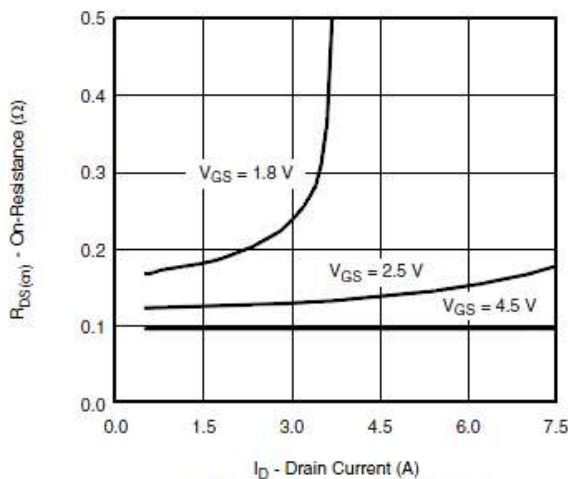
➤ Typical Characteristics



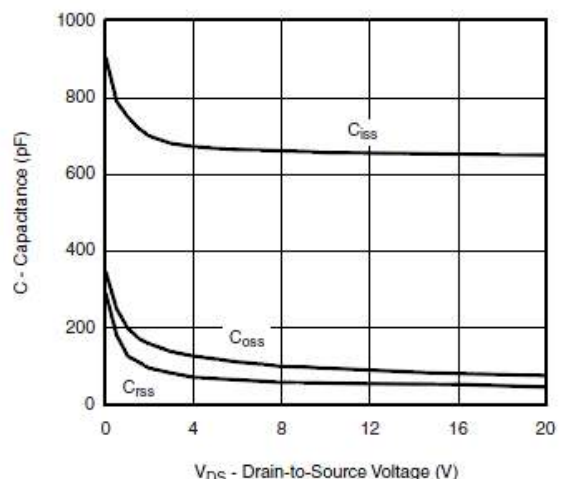
Output Characteristics



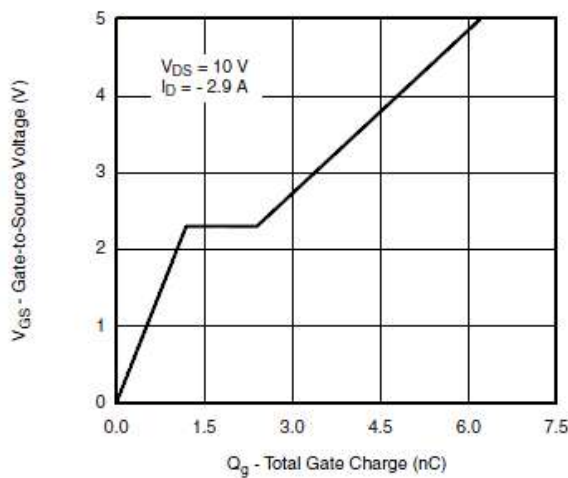
Transfer Characteristics



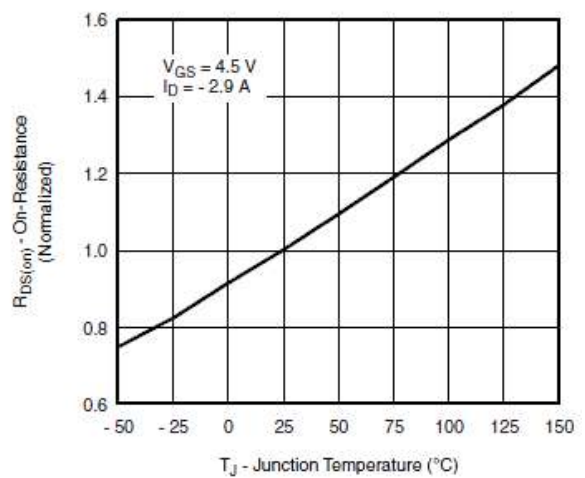
On-Resistance vs. Drain Current



Capacitance

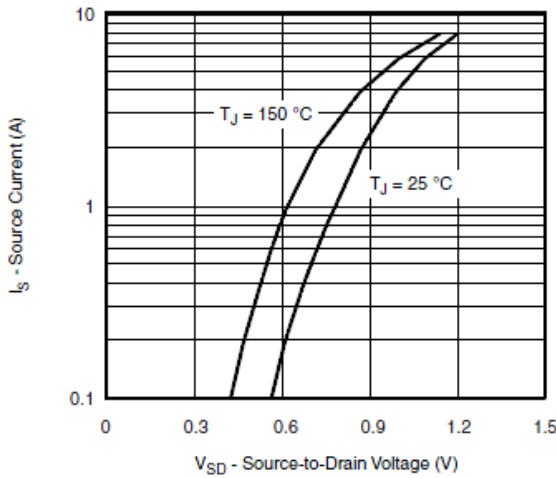


Gate Charge

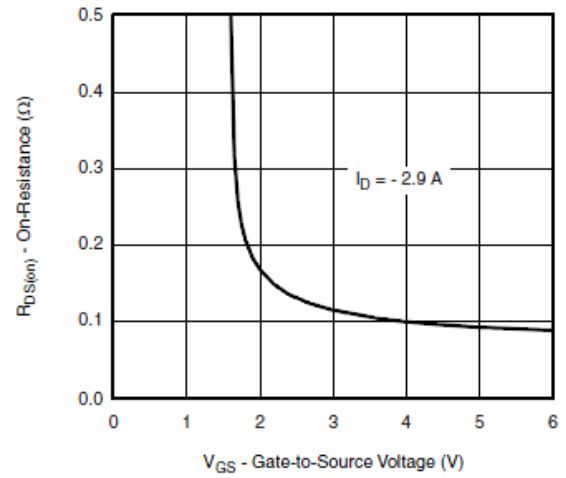


On-Resistance vs. Junction Temperature

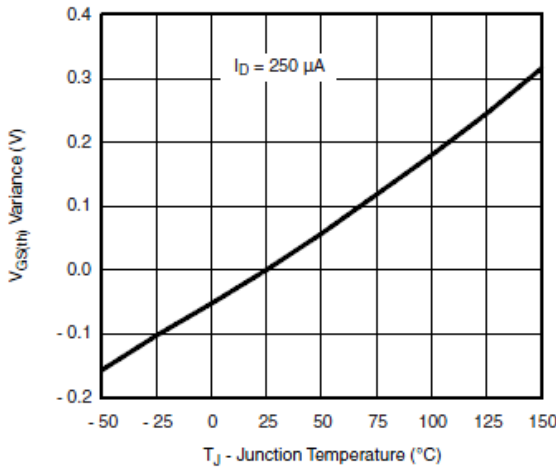
P-Ch -20V Fast Switching MOSFET
 $V_{DS} = -20V$, $I_D = -3.0A$, $R_{DS(ON)} = 110m\Omega$



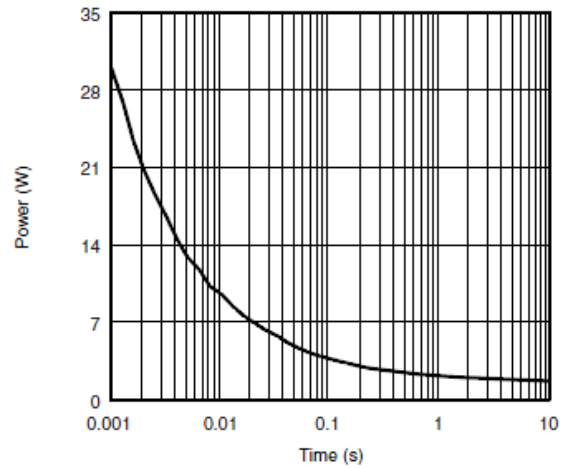
Source-Drain Diode Forward Voltage



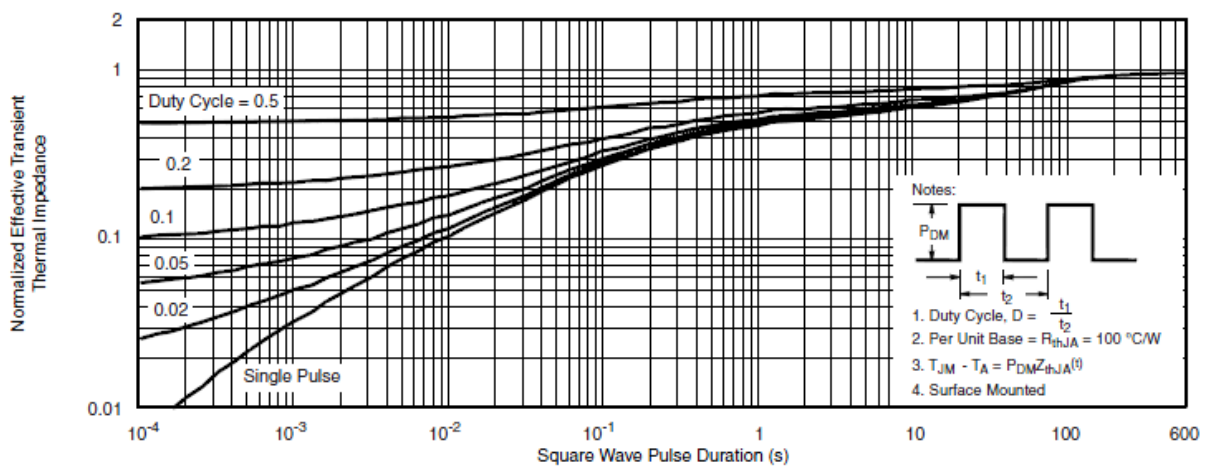
On-Resistance vs. Gate-to-Source Voltage



Threshold Voltage



Single Pulse Power, Junction-to-Ambient



Normalized Thermal Transient Impedance, Junction-to-Ambient

➤ Recommend IR Reflow Soldering Thermal Profile

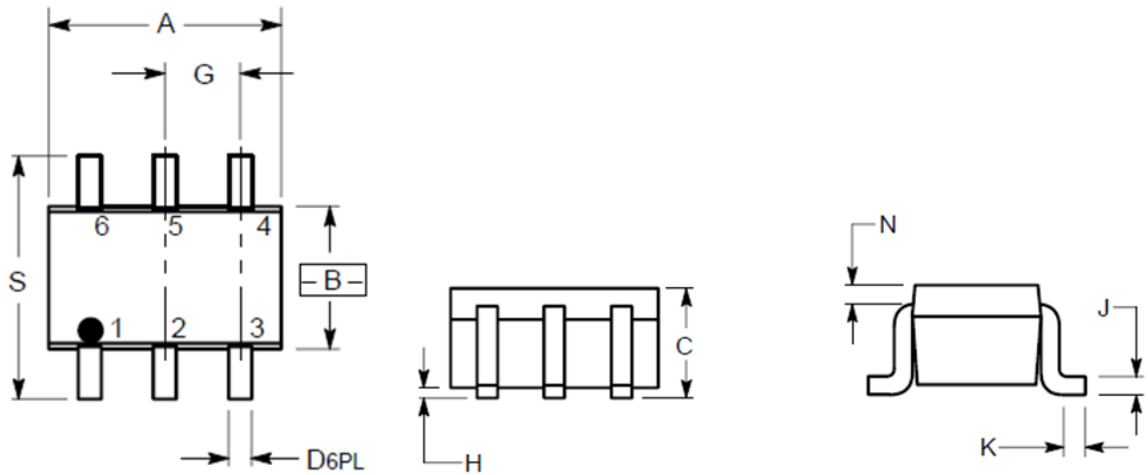


| Profile Feature | Pb-Free Assembly Profile |
|---|--------------------------|
| Temperature Min. (T Amin) | 150°C |
| Temperature Max. (Tsmax) | 200°C |
| Time (ts) from (T Amin to Tsmax) | 60-120 seconds |
| Average Ramp-up Rate (tL to tP) | 3°C/second max. |
| Liquidous Temperature (TL) | 217°C |
| Time (tL) Maintained Above (TL) | 60 – 150 seconds |
| Peak Temperature | 260°C +0°C / -5°C |
| Time (tP) within 5°C of actual Peak Temperature | 30 seconds |
| Ramp-down Rate (TP to TL) | 6°C/second max |
| Time 25°C to Peak Temperature | 8 minutes max. |

➤ Ordering Information

| Part Number | Description | Quantity |
|-------------|--------------|----------|
| PAP2611H | SOT-363 Reel | 3000 pcs |

➤ Package Information (SOT-363)



| | | |
|----------|--------------------------------------|----------------------------|
| \oplus | 0.2 (0.008) $\text{\textcircled{M}}$ | B $\text{\textcircled{M}}$ |
|----------|--------------------------------------|----------------------------|

| DIM | INCHES | | MILLIMETERS | |
|-----|-----------|-------|-------------|------|
| | MIN | MAX | MIN | MAX |
| A | 0.071 | 0.087 | 1.80 | 2.20 |
| B | 0.045 | 0.053 | 1.15 | 1.35 |
| C | 0.031 | 0.043 | 0.80 | 1.10 |
| D | 0.004 | 0.012 | 0.10 | 0.30 |
| G | 0.026 BSC | | 0.65 BSC | |
| H | --- | 0.004 | --- | 0.10 |
| J | 0.004 | 0.010 | 0.10 | 0.25 |
| K | 0.004 | 0.012 | 0.10 | 0.30 |
| N | 0.008 REF | | 0.20 REF | |
| S | 0.079 | 0.087 | 2.00 | 2.20 |

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