

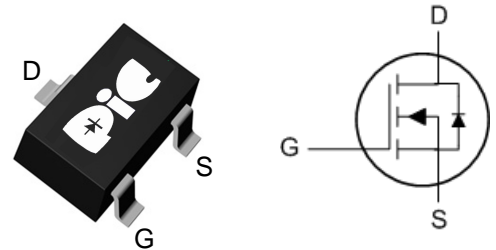
➤ General Description

This PAN0034ANS N-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

- Super high density cell design for extremely low $R_{DS(ON)}$
- Exceptional on-resistance and maximum DC current capability
- SOT-23S package design

➤ SOT-23S



➤ Application

- DC/DC Converters
- Load Switch
- LED Backlighting in LCD TVs

➤ Absolute Maximum Ratings

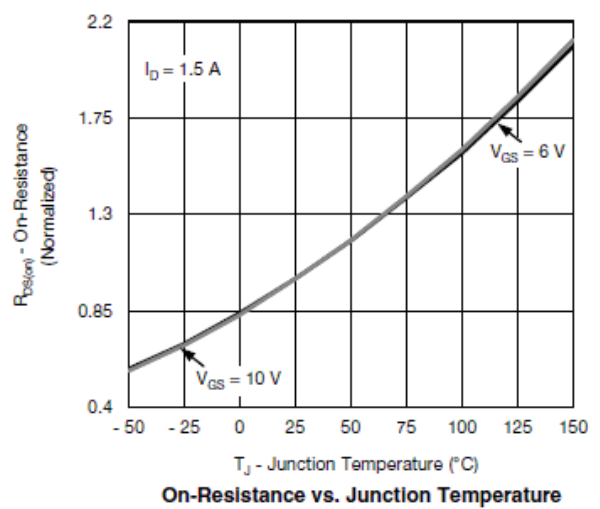
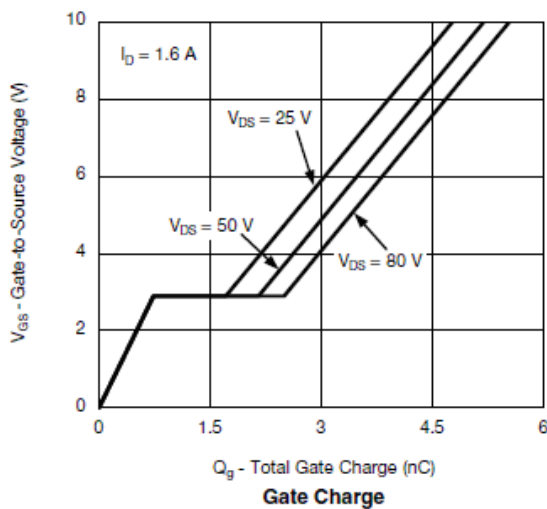
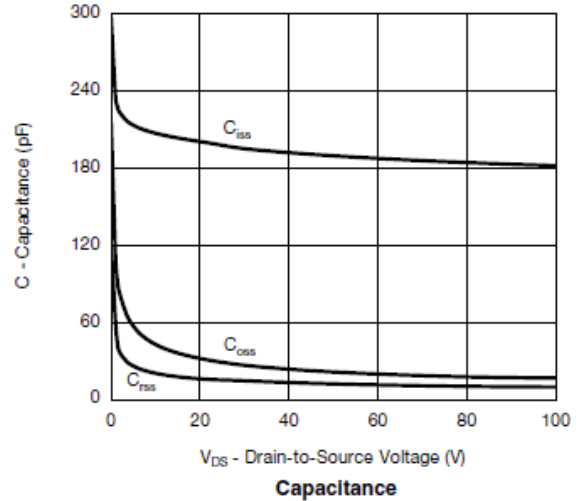
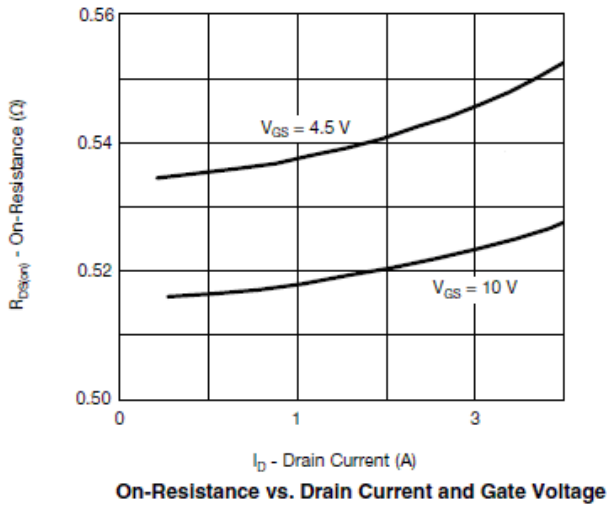
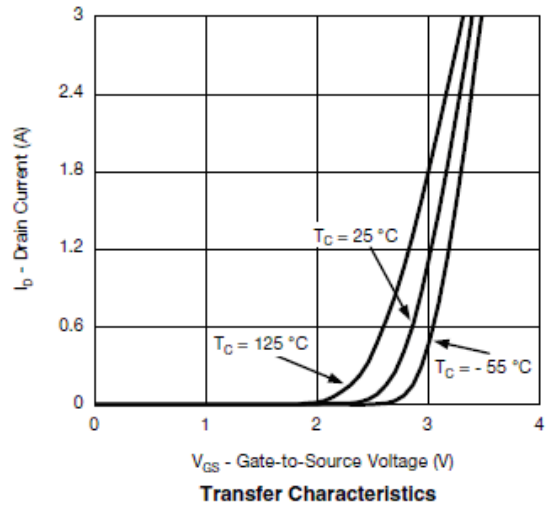
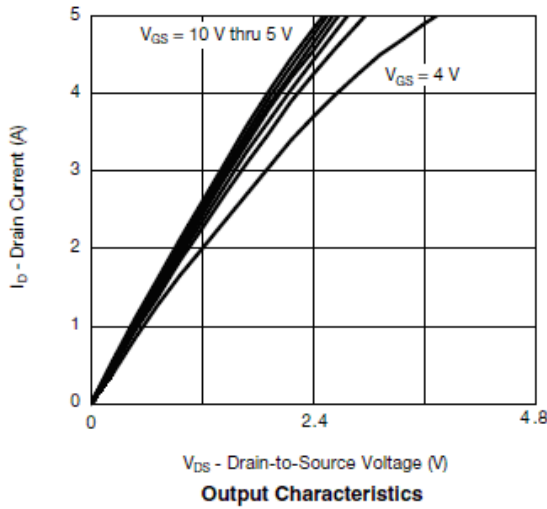
| Parameter | Symbol | Rating | Unit |
|---|-----------------|------------------|--------------|
| Drain-Source Voltage | V_{DSS} | 100 | V |
| Gate –Source Voltage | V_{GSS} | ± 20 | V |
| Continuous Drain Current($T_J=150^\circ C$) | I_D | $T_c=25^\circ C$ | 2.3 |
| | | $T_c=70^\circ C$ | 1.8 |
| Pulsed Drain Current | I_{DM} | 5 | A |
| Continuous Source Current(Diode Conduction) | I_S | 1.6 | A |
| Power Dissipation | P_D | $T_A=25^\circ C$ | 1.25 |
| | | $T_A=70^\circ C$ | 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 ($T_J=25^\circ C$ Unless otherwise noted)**

| Parameter | Symbol | Conditions | Min. | Typ | Max. | Unit |
|---------------------------------|---------------|--|------|------|-----------|------------|
| Static | | | | | | |
| Drain-Source Breakdown Voltage | $V_{(BR)DSS}$ | $V_{GS}=0V, I_D=250\mu A$ | 120 | 132 | | V |
| Gate Threshold Voltage | $V_{GS(th)}$ | $V_{DS}=V_{GS}, I_D=250\mu A$ | 1.0 | | 3.0 | |
| Gate Leakage Current | I_{GSS} | $V_{DS}=0V, V_{GS}=\pm 20V$ | | | ± 100 | nA |
| Zero Gate Voltage Drain Current | I_{DSS} | $V_{DS}=100V, V_{GS}=0V$ | | | 1 | uA |
| | | $V_{DS}=100V, V_{GS}=0V$ $T_J=85^\circ C$ | | | 10 | |
| On-State Drain Current | $I_{D(on)}$ | $V_{DS} \geq 5V, V_{GS}=4.5V$ | 2.3 | | | A |
| Drain-Source On-Resistance | $R_{DS(on)}$ | $V_{GS}=10V, I_D=2.0A$ | | 500 | 560 | m Ω |
| | | $V_{GS}=4.5V, I_D=1.0A$ | | 520 | 580 | |
| Forward Transconductance | g_{FS} | $V_{DS}=20V, I_D=1.5A$ | | 2 | | S |
| Diode Forward Voltage | V_{SD} | $I_S=1.3A, V_{GS}=0V$ | | 0.85 | 1.2 | V |
| Dynamic | | | | | | |
| Total Gate Charge | Q_g | $V_{DS}=50V, V_{GS}=4.5V$ $I_D \equiv 1.6A$ | | 2.8 | 5.8 | nC |
| Gate-Source Charge | Q_{gs} | | | 0.75 | | |
| Gate-Drain Charge | Q_{gd} | | | 1.4 | | |
| Input Capacitance | C_{iss} | $V_{DS}=50V, V_{GS}=0V$ $f=1MHz$ | | 200 | | pF |
| Output Capacitance | C_{oss} | | | 22 | | |
| Reverse Transfer Capacitance | C_{rss} | | | 13 | | |
| Turn-On Time | $t_{d(on)}$ | $V_{DD}=50V, R_L=39\Omega$ $I_D \equiv 1.3A, V_{GEN}=4.5V$ $R_G=1\Omega$ | | 25 | 50 | ns |
| | t_r | | | 20 | 50 | |
| Turn-Off Time | $t_{d(off)}$ | | | 15 | 30 | |
| | t_f | | | 10 | 25 | |

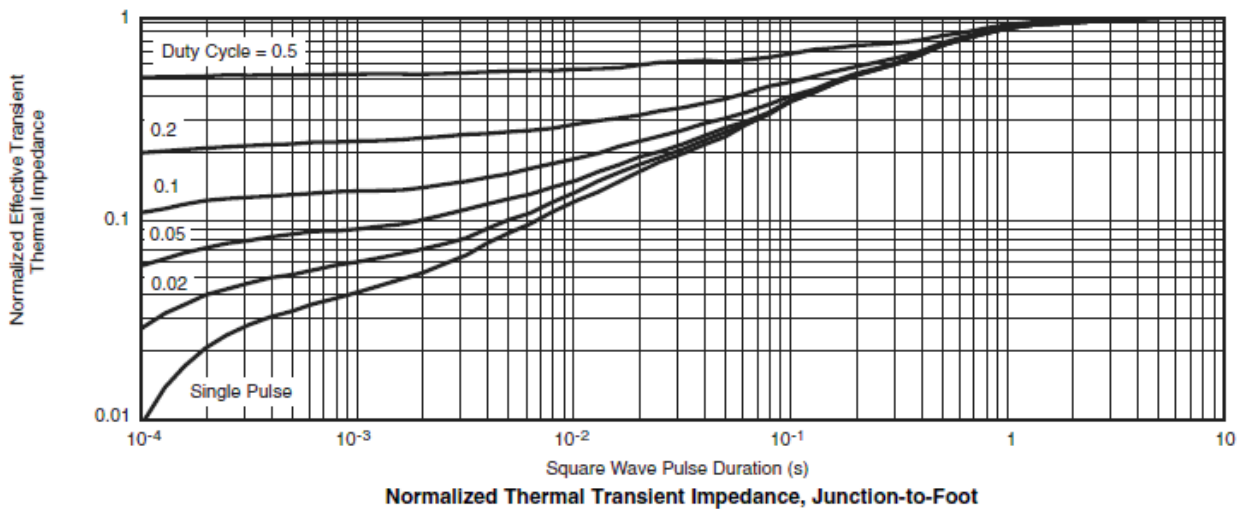
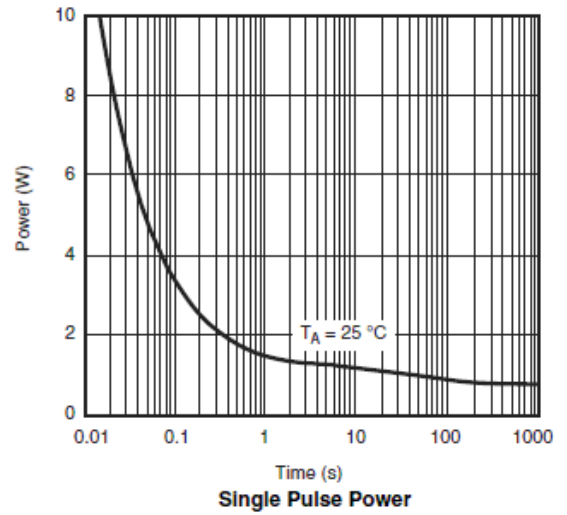
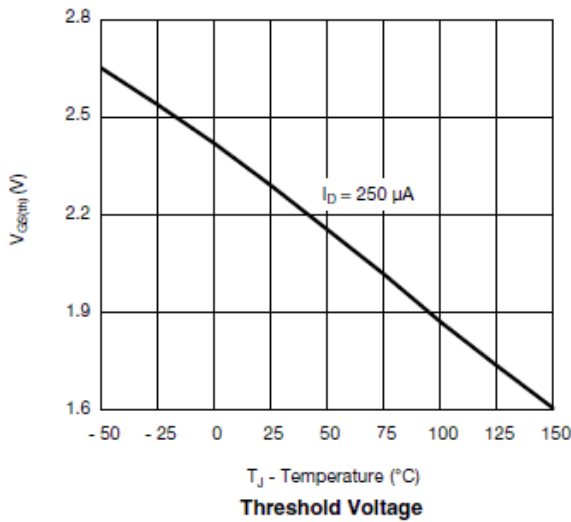
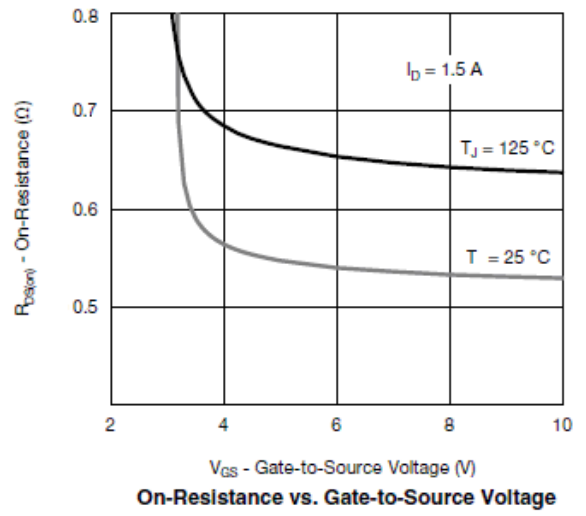
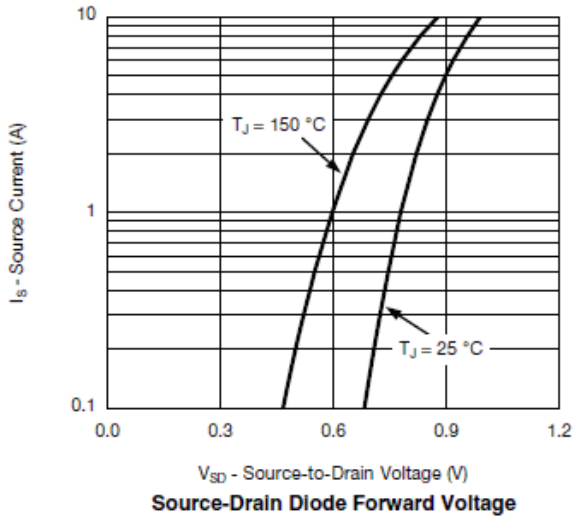
N-Ch 100V Fast Switching MOSFET
 $V_{DS}=100V$, $I_D=2.3A$, $R_{DS(on)}=560m\Omega$

➤ Typical Characteristics



N-Ch 100V Fast Switching MOSFET

$V_{DS}=100V$, $I_D=2.3A$, $R_{DS(on)}=560m\Omega$



➤ Recommad IR Reflow Soldering Thermal Profile

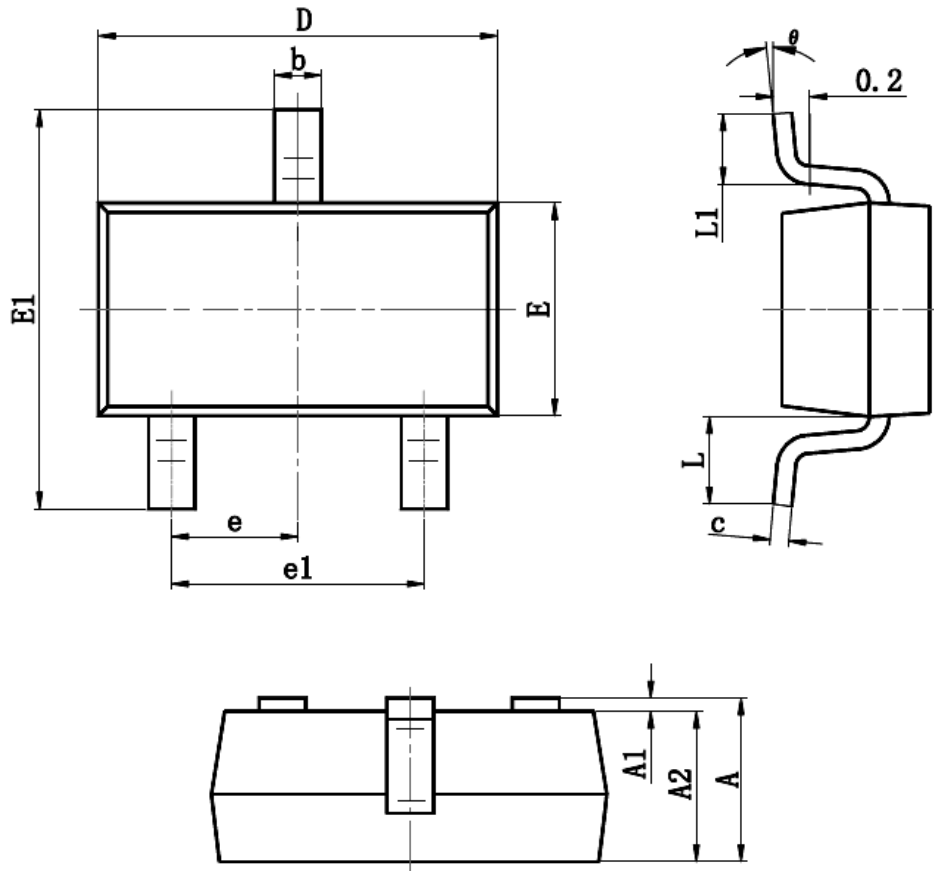


| Profile Feature | Pb-Free Assembly Profile |
|--|--------------------------|
| Temperature Min. (T_{smin}) | 150°C |
| Temperature Max. (T_{smax}) | 200°C |
| Time (t_s) from (T_{smin} to T_{smax}) | 60-120 seconds |
| Average Ramp-up Rate (t_L to t_P) | 3°C/second max. |
| Liquidous Temperature (T_L) | 217°C |
| Time (t_L) Maintained Above (T_L) | 60 – 150 seconds |
| Peak Temperature | 260°C +0°C / -5°C |
| Time (t_P) within 5°C of actual Peak Temperature | 30 seconds |
| Ramp-down Rate (T_P to T_L) | 6°C/second max |
| Time 25°C to Peak Temperature | 8 minutes max. |

➤ Ordering Information

| Part Number | Description | Quantity |
|-------------|--------------|----------|
| PAN0034ANS | SOT-23S Reel | 3000 pcs |

➤ Package Information (SOT-23S)



| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|----------|---------------------------|-------|----------------------|-------|
| | Min | Max | Min | Max |
| A | 0.900 | 1.200 | 0.035 | 0.043 |
| A1 | 0.000 | 0.100 | 0.000 | 0.004 |
| A2 | 0.900 | 1.100 | 0.035 | 0.039 |
| b | 0.300 | 0.500 | 0.012 | 0.020 |
| c | 0.080 | 0.150 | 0.003 | 0.006 |
| D | 2.800 | 3.000 | 0.110 | 0.118 |
| E | 1.200 | 1.400 | 0.047 | 0.055 |
| E1 | 2.250 | 2.550 | 0.089 | 0.100 |
| e | 0.950 TYP | | 0.037 TYP | |
| e1 | 1.800 | 2.000 | 0.071 | 0.079 |
| L | 0.550 REF | | 0.022 REF | |
| L1 | 0.300 | 0.500 | 0.012 | 0.020 |
| θ | 0° | 8° | 0° | 6° |

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