SOT-23 ḾḾ Ḅ P ʚ ʃ ᾯ Ẓ ᐟ
S- CHANNEL MOSFET in a SOT-23 Plastic Package.

ḤḾ ᵑ ɔ ᶖ ı Ã ʜ ʰH ᵱ ȏ ı ḤḾ ᵑ ɔ я ı ᐠ ᵀ DHF0T434 ‰ ´ ᴝ ᶩ ᵕ ό ɻ ∂ ı ᵑ̀ ᶠ ᵝ
Ultra Low on-resistance. fast switching.Low on voltage, Qualified to AEC-Q101 Standards for High Reliability, HF Product.

S Z P Ẓ ᵻ ʌь ق ɔ Ã ʜ ı ◗ ′ ∩ ᶎ Ẓ ᵻ 🄾🄱 Ⱶ ɻ ∂
PWM application & Load switch, Meet the stringent requirements of automotive applications.

## / Absolute Maximum Ratings(Ta=25 )

| v Ѭ Parameter | | ч N Symbol | Ѭ Ё Rating | D Ц Unit |
|---|---|---|---|---|
| Drain–Source Voltage | | $V_{DSS}$ | -60 | V |
| Gate–Body Leakage Voltage | | $V_{GSS}$ | ±20 | V |
| Drain Current - Continuous | | $I_D$ | -5 | A |
| Pulsed Drain Current | | $I_{DM}$ | -18 | A |
| Power Dissipation (Surface Mounted on FR4 Board, t ≤ 10 sec.) | | $P_D$ | 1.5 | W |
| Operating and Storage Temperature Range | | $T_J$,$T_{STG}$ | -55 150 | |
| Maximum Junction-to-Ambient | t ≤ 10s | $R_{\theta JA}$ | 118.6 | /W |
| Maximum Junction-to-Ambient | Steady-State | | 161.6 | /W |
| Maximum Junction-to-Lead | Steady-State | $R_{\theta JL}$ | 83.3 | /W |

## / Electrical Characteristics(Ta=25 )

| v Ѭ Parameter | ч N Symbol | Ы ; ƚ т Test Conditions | ѡ ṇ Ё Min | Ɛ ʒ Ё Typ | ѡ ᶻ Ё Max | D Ц Unit |
|---|---|---|---|---|---|---|
| Drain–Source Breakdown Voltage | $V_{(BR)DSS}$ | $V_{GS}$=0V $I_D$=-250μA | -60 | -63 | | V |
| Gate Threshold Voltage | $V_{GS(th)}$ | $V_{DS}$=$V_{GS}$ $I_D$=-250μA | -1 | -1.5 | -2.5 | V |
| Static Drain–Source On–Resistance | $R_{DS(on)}$ | $V_{GS}$=-10V $I_D$=-2A | | 84 | 100 | mΩ |
| | | $V_{GS}$=-4.5V $I_D$=-1A | | 103 | 125 | mΩ |
| Zero Gate Voltage Drain Current | $I_{DSS}$ | $V_{DS}$=-60V $V_{GS}$=0V | | | -1.0 | μA |
| Gate–Body Leakage. | $I_{GSS}$ | $V_{GS}$=-20V | | | -100 | nA |
| | | $V_{GS}$=20V | | | 100 | nA |
| Drain-Source Diode Forward Voltage | $V_{SD}$ | $V_{GS}$=0V $I_S$=-1A $T_J$=25 | | | -1.2 | V |
| Input Capacitance | $C_{iss}$ | $V_{DS}$=-25V $V_{GS}$=0V f=1.0MHz | | 885 | | pF |
| Output Capacitance | $C_{oss}$ | | | 90 | | |
| Reverse Transfer Capacitance | $C_{rss}$ | | | 64 | | |
| Total Gate Charge | $Q_g$(-10V) | $V_{DS}$=-30V $V_{GS}$=-10.0V $I_D$=-5A | | 25 | | nC |
| Total Gate Charge | $Q_g$(-4.5V) | | | 9.6 | | |
| Gate-to-Source Charge | $Q_{gs}$ | | | 3 | | |
| Gate-to-Drain Charge | $Q_{gd}$ | | | 7 | | |
| Turn–On Delay Time | $t_{d(on)}$ | $V_{DD}$=-30V $V_{GS}$=-10V $R_L$=7.5Ω $R_G$=3Ω | | 8 | | ns |
| Turn–On Rise Time | $t_r$ | | | 4 | | |
| Turn–Off Delay Time | $t_{d(off)}$ | | | 32 | | |
| Turn–Off Fall Time | $t_f$ | | | 7 | | |

## / Electrical Characteristic Curve

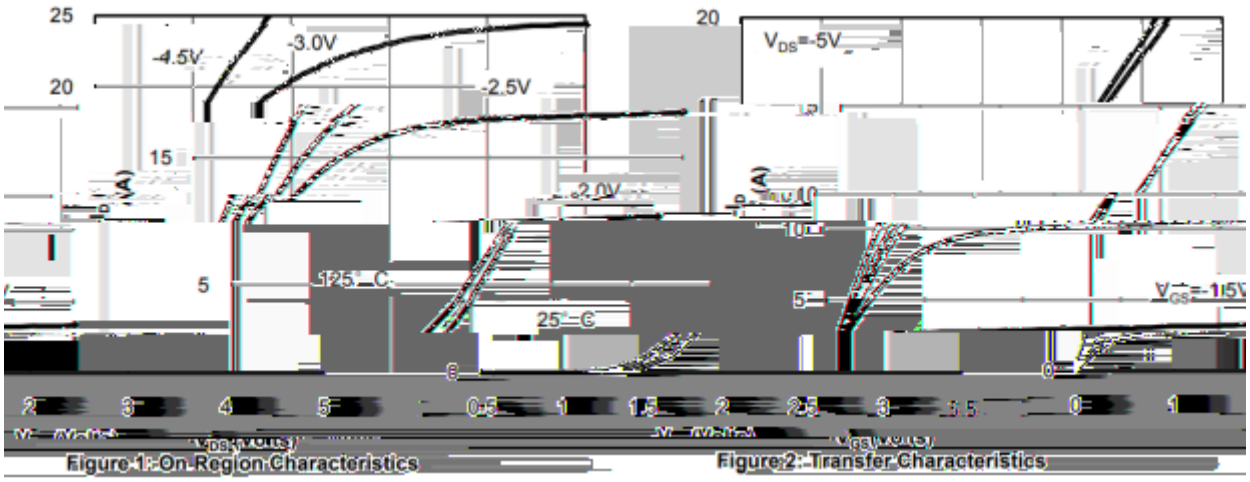
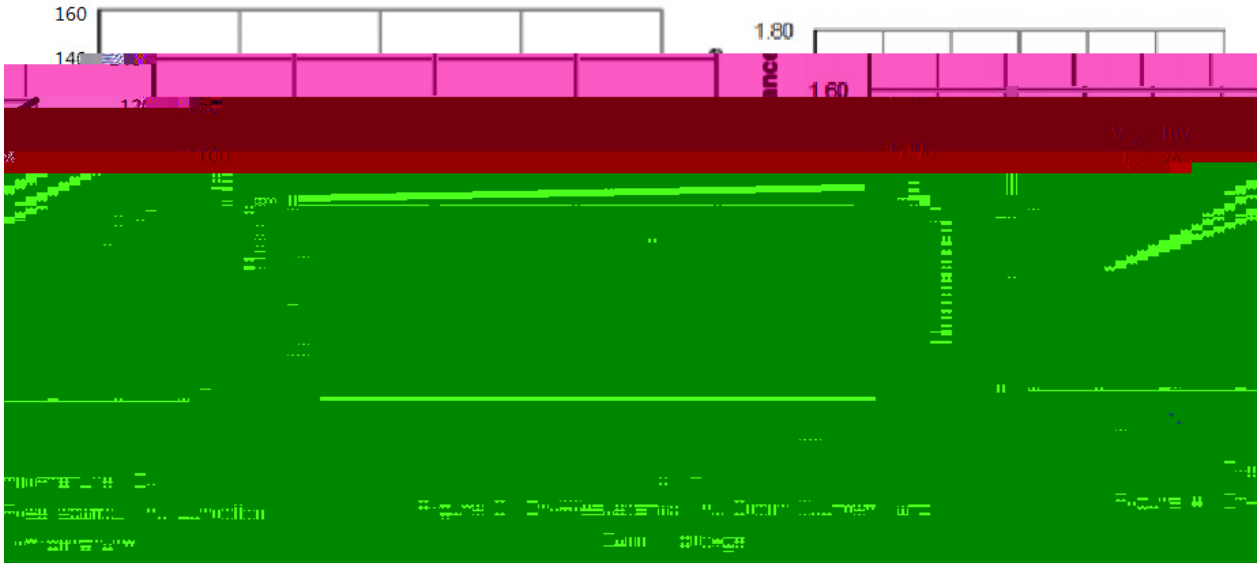



Figure 1: On-Region Characteristics

Figure 2: Transfer Characteristics



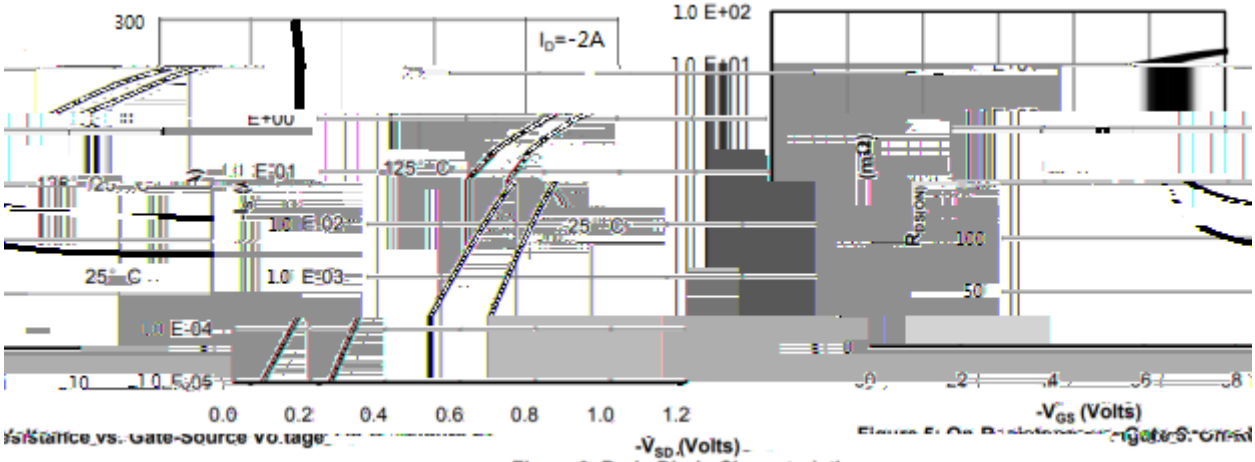



Figure 6: Body-Diode Characteristics

## / Electrical Characteristic Curve

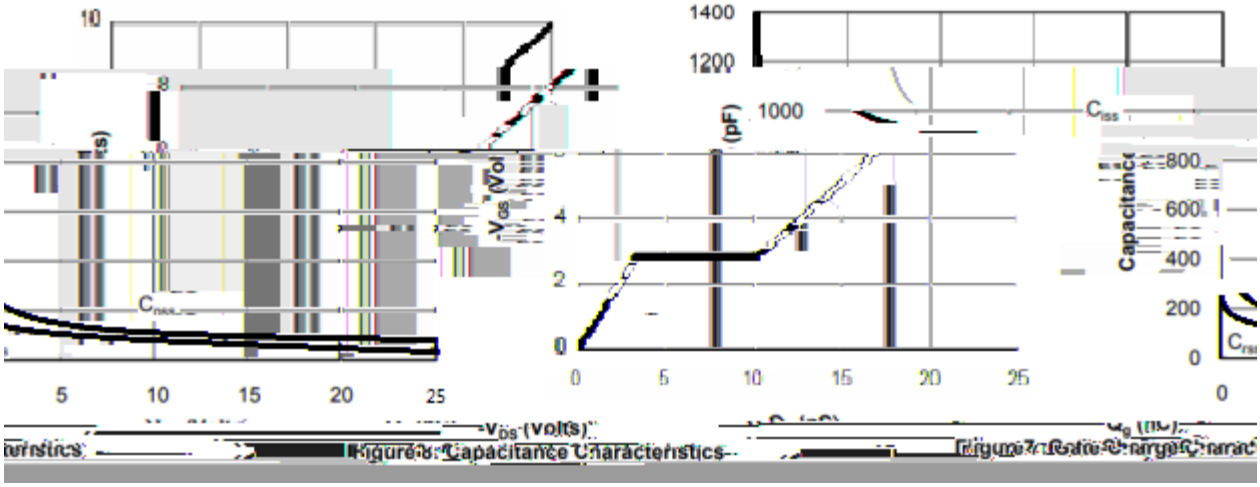



Figure 6: Capacitance Characteristics

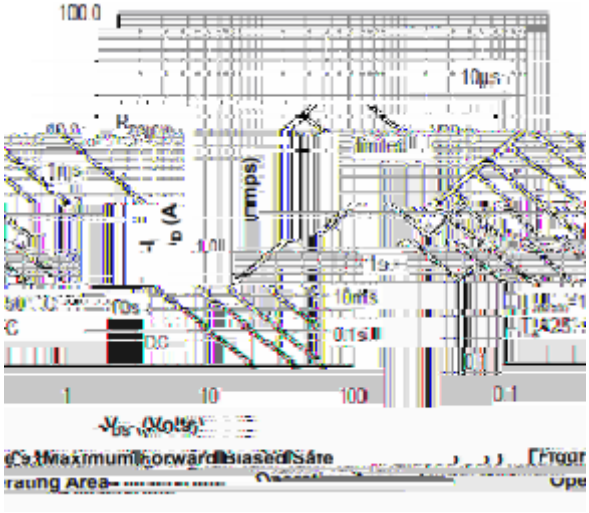



Figure 8: Maximum Forward Biased Safe Operating Area

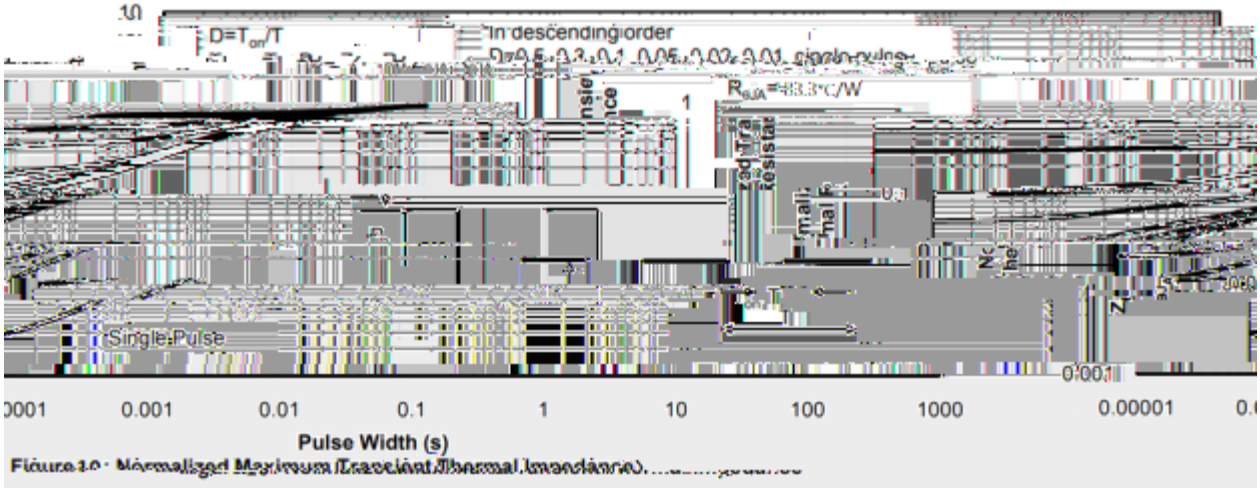
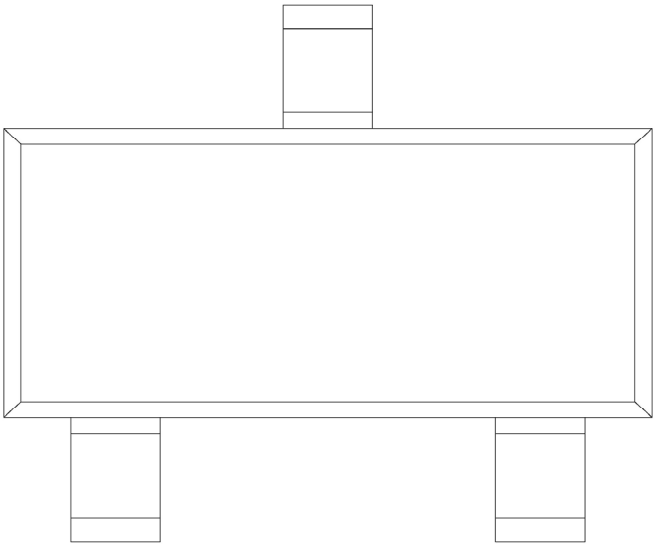



Figure 10: Normalized Maximum Transient Thermal Impedance

## / Marking Instructions



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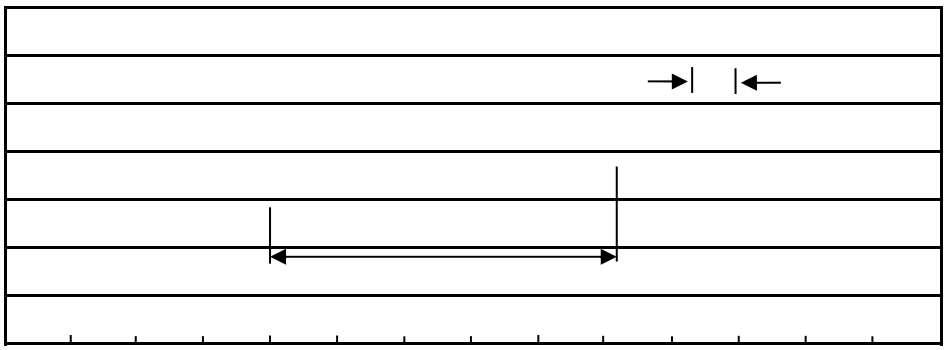
5P6 χ ᄒᄎ ᄀ ᴺ ᄀᄇ

Note:

Q: Automobile halogen-free product Code

5P6: Product Type

## ( ) /



ب ˝ χ

1 Ĺ ♬ □ ỷ 150 Ḱ 200 ɬ ı `H ڑ 60 Ḱ 120sec;

2 Š Ө □ ỷ 255 ° 5 ɬ ı `H ڑ `Y ʌ ʁ 5 ° 0.5sec;

3 ì ˙ ٢ ˛ ɔ ѡ ỷ ʁ 2 Ḱ 10 ɬ /sec.

Note:

1.Preheating:150~200 ɬ , Time:60~120sec.

2.Peak Temp.:255 ° 5 ɬ , Duration:5 ° 0.5sec.

3.Cooling Speed: 2~10 ɬ /sec.

## / Resistance to Soldering Heat Test Conditions

□ ỷ χ 260 ° 5 ɬ `H ڑ χ 10 ° 1 sec. Temp.:260±5 Time:10±1 sec

## / Packaging SPEC.

ɔ ` ɣ Ł / REEL

| Package Type | Units | | | | | Dimension | | (unit mm³) |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |
| SOT-23 | 3,000 | 10 | 30,000 | 6 | 180,000 | 7 ×8 | 180×120×180 | 390×385×205 |

## / Notices