

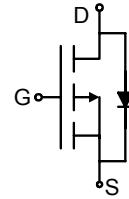
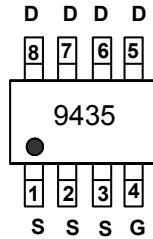
LP9435ET1G

GENERAL FEATURES

- $V_{DS} = -30V, I_D = -5.3A$
 $R_{DS(ON)} < 85m\Omega @ V_{GS}=-4.5V$
 $R_{DS(ON)} < 53m\Omega @ V_{GS}=-10V$
- High Power and current handling capability
- Lead free product is acquired
- Surface Mount Package



SOP-8 top view



ABSOLUTE MAXIMUM RATINGS(TA=25°C unless otherwise noted)

| Parameter | Symbol | Limit | Unit |
|---|----------------|------------|------|
| Drain-Source Voltage | V_{DS} | -30 | V |
| Gate-Source Voltage | V_{GS} | ±20 | V |
| Drain Current-Continuous@ Current-Pulsed (Note 1) | I_D | -5.3 | A |
| | I_{DM} | -20 | A |
| Maximum Power Dissipation | P_D | 2.5 | W |
| Operating Junction and Storage Temperature Range | T_J, T_{STG} | -55 To 150 | °C |

THERMAL CHARACTERISTICS

| | | | |
|--|-----------------|----|------|
| Thermal Resistance, Junction-to-Ambient (Note 2) | $R_{\theta JA}$ | 50 | °C/W |
|--|-----------------|----|------|

ELECTRICAL CHARACTERISTICS (TA=25°C unless otherwise noted)

| Parameter | Symbol | Condition | Min | Typ | Max | Unit |
|------------------------------------|------------|-----------------------------|-----|-----|------|------|
| OFF CHARACTERISTICS | | | | | | |
| Drain-Source Breakdown Voltage | BV_{DSS} | $V_{GS}=0V, I_D=-250\mu A$ | -30 | | | V |
| Zero Gate Voltage Drain Current | I_{DSS} | $V_{DS}=-24V, V_{GS}=0V$ | | | -1 | μA |
| Gate-Body Leakage Current | I_{GSS} | $V_{GS}=\pm 20V, V_{DS}=0V$ | | | ±100 | nA |
| ON CHARACTERISTICS (Note 3) | | | | | | |

| | | | | | | |
|---|--------------|---|----|------|------|----|
| Gate Threshold Voltage | $V_{GS(th)}$ | $V_{DS}=V_{GS}, I_D=-250\mu A$ | -1 | | -3 | V |
| Drain-Source On-State Resistance | $R_{DS(on)}$ | $V_{GS}=-10V, I_D=-5.3A$ | | 46 | 60 | mΩ |
| | | $V_{GS}=-4.5V, I_D=-4.2A$ | | 70 | 90 | |
| Forward Transconductance | g_{FS} | $V_{DS}=-15V, I_D=-4.5A$ | 4 | 7 | | S |
| DYNAMIC CHARACTERISTICS (Note4) | | | | | | |
| Input Capacitance | C_{iss} | $V_{DS}=-15V, V_{GS}=0V,$ $F=1.0MHz$ | | 1040 | | PF |
| Output Capacitance | C_{oss} | | | 420 | | PF |
| Reverse Transfer Capacitance | C_{rss} | | | 150 | | PF |
| SWITCHING CHARACTERISTICS (Note 4) | | | | | | |
| Turn-on Delay Time | $t_{d(on)}$ | $V_{DD}=-15V, I_D=-1A,$ $V_{GS}=-10V, R_{GEN}=6\Omega$ | | 19 | 26 | nS |
| Turn-on Rise Time | t_r | | | 9 | 13 | nS |
| Turn-Off Delay Time | $t_{d(off)}$ | | | 74 | 105 | nS |
| Turn-Off Fall Time | t_f | | | 36 | 50 | nS |
| Total Gate Charge | Q_g | $V_{DS}=-15V, I_D=-5.3A, V_{GS}=-10V$ | | 22.5 | 29 | nC |
| Gate-Source Charge | Q_{gs} | | | 2 | | nC |
| Gate-Drain Charge | Q_{gd} | | | 6 | | nC |
| DRAIN-SOURCE DIODE CHARACTERISTICS | | | | | | |
| Diode Forward Voltage (Note 3) | V_{SD} | $V_{GS}=0V, I_S=-1.7A$ | | | -1.2 | V |
| Diode Forward Current (Note 2) | I_S | | | | -1.9 | A |

TYPICAL ELECTRICAL AND THERMAL CHARACTERISTICS

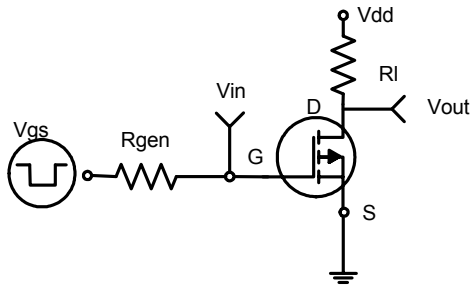


Figure1:Switching Test Circuit

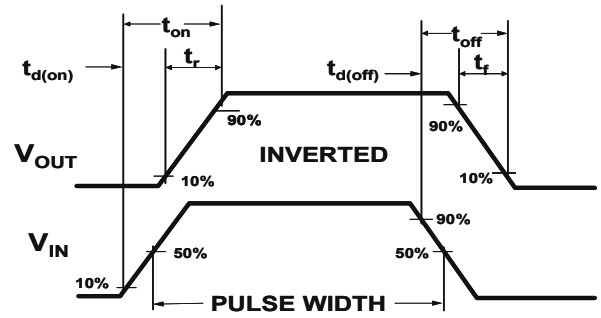


Figure 2:Switching Waveforms

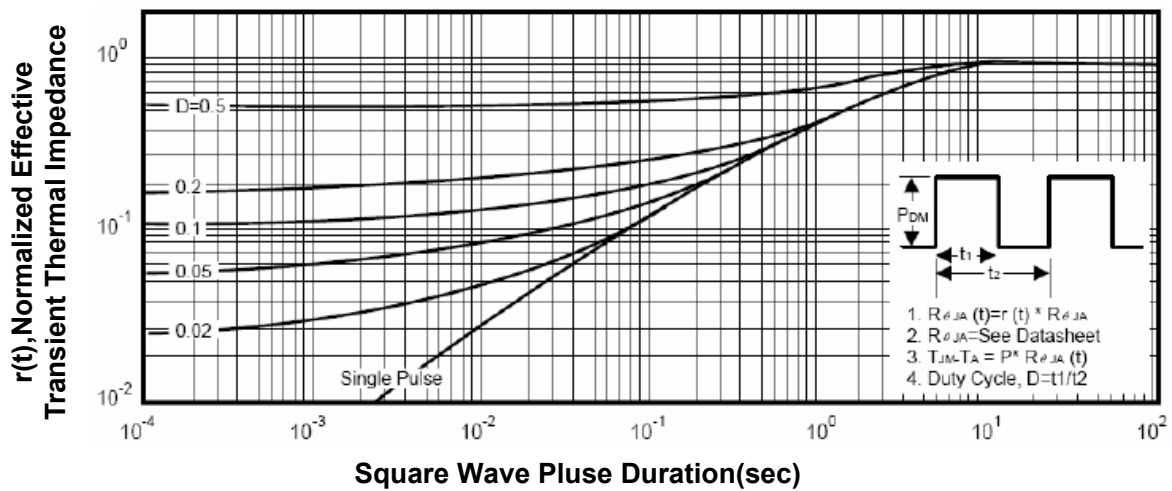


Figure 3: Normalized Maximum Transient Thermal Impedance

SOP-8

