High Voltage Power MOSFET

(Electrically Isolated Tab)

N-Channel Enhancement Mode

Symbol | Test Conditions | Maximum Ratings
---|---|---
\(V_{DSS}\) | \(T_J = 25^\circ C\) to \(150^\circ C\) | 4500 V
\(V_{DGR}\) | \(T_J = 25^\circ C\) to \(150^\circ C\), \(R_{GS} = 1\Omega\) | 4500 V
\(V_{SS}\) | Continuous | \(\pm 20\) V
\(V_{GSM}\) | Transient | \(\pm 30\) V
\(I_{DSS}\) | \(T_C = 25^\circ C\) | 0.9 A
\(I_{OM}\) | \(T_C = 25^\circ C\), Pulse Width Limited by \(T_J\) | 3.0 A
\(P_D\) | \(T_C = 25^\circ C\) | 160 W
\(T_J\) | - 55 ... +150 \(^\circ C\)
\(T_{J\max}\) | 150 \(^\circ C\)
\(T_{Vin}\) | - 55 ... +150 \(^\circ C\)

Maximum Lead Temperature for Soldering
\(T_{SOLD}\) | 300 \(^\circ C\)
Plastic Body for 10s
\(T_{L}\) | 260 \(^\circ C\)

Mounting Force
\(F_C\) | 20...120 / 4.5...27 N/lb.

50/60Hz, 1 Minute
\(V_{ISOL}\) | 4500 V

Weight
\(V_{DSS}\) | 4500 V
\(I_{D25}\) | 0.9 A
\(R_{DS(on)}\) | \(\leq 80\) \(\Omega\)

Features
- Silicon Chip on Direct-Copper Bond (DCB) Substrate
- Isolated Mounting Surface
- 4500V~ Electrical Isolation
- Molding Epoxies meet UL 94 V-0 Flammability Classification

Advantages
- High Voltage Package
- Easy to Mount
- Space Savings
- High Power Density

Applications
- High Voltage Power Supplies
- Capacitor Discharge Applications
- Pulse Circuits
- Laser and X-Ray Generation Systems
IXYS MOSFETs and IGBTs are covered by one or more of the following U.S. patents:

4,835,592 4,931,844 5,049,961 5,237,481 6,162,665 6,404,065
6,683,505 6,710,405 6,759,692 7,005,734 7,157,338
7,063,975

Notes:
1. Pulse test, \( t \leq 300\,\mu s \), duty cycle, \( d \leq 2\% \).
2. Part must be heatsunk for high-temp IDSS measurement.
Fig. 1. Output Characteristics @ $T_J = 25^\circ C$

Fig. 2. Output Characteristics @ $T_J = 125^\circ C$

Fig. 3. $R_{DS(\text{on})}$ Normalized to $I_D = 0.5A$ Value vs. Junction Temperature

Fig. 4. $R_{DS(\text{on})}$ Normalized to $I_D = 0.5A$ Value vs. Drain Current

Fig. 5. Maximum Drain Current vs. Case Temperature

Fig. 6. Input Admittance
Fig. 12. Forward-Bias Safe Operating Area
@ $T_C = 25^\circ$C

Fig. 13. Forward-Bias Safe Operating Area
@ $T_C = 75^\circ$C