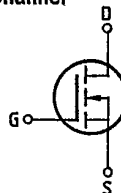


Main ratings

Drain-source voltage $V_{DS} = 500 \text{ V}$
 Continuous drain current $I_D = 9,5 \text{ A}$
 Drain-source on-resistance $R_{DS(on)} = 0,6 \Omega$

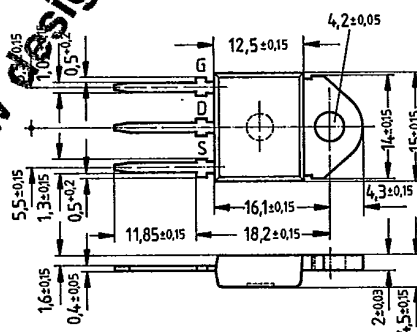
N-Channel



Description SIPMOS, N-channel, enhancement mode
Case Plastic package 15 in accordance with DIN 41869 or TO 218 AA (TOP 3) in accordance with JEDEC.
 The drain terminal is conductively connected to the mounting flange.
 Approx. weight 4,5 g

| Type | Ordering code |
|---------|-----------------|
| BUZ 353 | C67078-A3104-A2 |

Not for new design



Dimensions in mm

Maximum ratings

| Description | Symbols | Ratings | Units | Conditions |
|---|--------------------|------------------|-------------------|-------------------------------|
| Drain-source voltage | V_{DS} | 500 | V | |
| Drain-gate voltage | V_{DGR} | 500 | V | $R_{GS} = 20 \text{ k}\Omega$ |
| Continuous drain current | I_D | 9,5 | A | $T_C = 30^\circ \text{C}$ |
| Pulsed drain current | I_{Dpuls} | 38 | A | $T_C = 25^\circ \text{C}$ |
| Gate-source voltage | V_{GS} | ± 20 | V | |
| Max. power dissipation | P_D | 125 | W | $T_C = 25^\circ \text{C}$ |
| Operating and storage temperature range | T_j T_{stg} | $-55 \dots +150$ | $^\circ \text{C}$ | |
| DIN humidity category | E | | - | DIN 40040 |
| IEC climatic category | 55/150/56 | | | DIN IEC 68-1 |

Thermal resistance

| | | | |
|----------------|-------------|------------|-----|
| Chip - case | $R_{th JC}$ | $\leq 1,0$ | K/W |
| Chip - ambient | $R_{th JA}$ | ≤ 45 | K/W |

742

Preferred Type

1324

D-03

Electrical characteristics(at $T_j = 25^\circ\text{C}$ unless otherwise specified)

| Description | Symbol | Characteristics | | | Unit | Conditions |
|-------------|--------|-----------------|------|------|------|------------|
| | | min. | typ. | max. | | |

Static ratings

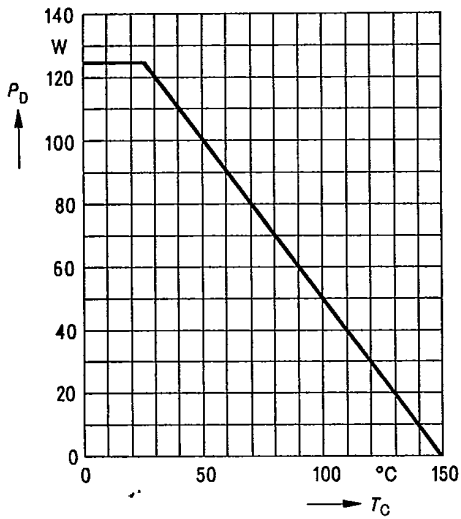
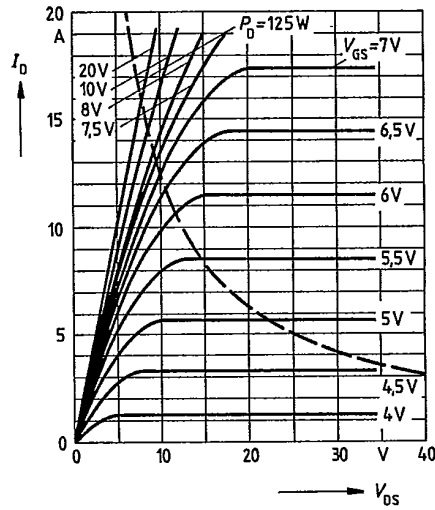
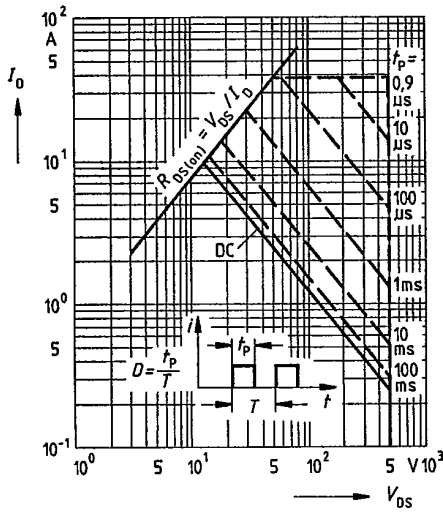
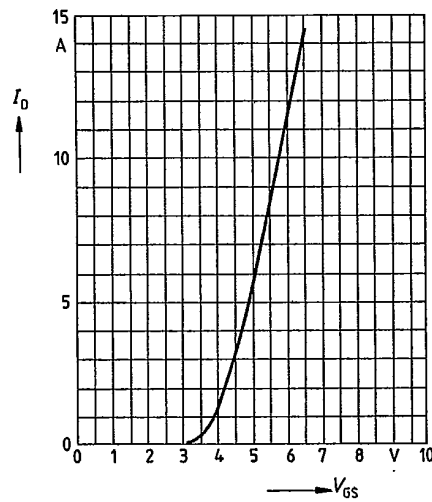
| | | | | | | |
|---------------------------------|----------------|-----|------|------|----------|---|
| Drain-source breakdown voltage | $V_{(BR) DSS}$ | 500 | — | — | V | $V_{GS} = 0V$ $I_D = 0,25mA$ |
| Gate threshold voltage | $V_{GS(th)}$ | 2,1 | 3,0 | 4,0 | | $V_{DS} = V_{GS}$ $I_D = 1mA$ |
| Zero gate voltage drain current | I_{DSS} | — | 20 | 250 | μA | $T_j = 25^\circ\text{C}$ $T_j = 125^\circ\text{C}$ $V_{DS} = 500V$ $V_{GS} = 0V$ |
| | | — | 100 | 1000 | | |
| Gate-source leakage current | I_{GSS} | — | 10 | 100 | nA | $V_{GS} = 20V$ $V_{DS} = 0V$ |
| Drain-source on-resistance | $R_{DS(on)}$ | — | 0,55 | 0,6 | Ω | $V_{GS} = 10V$ $I_D = 5,5A$ |

Dynamic ratings

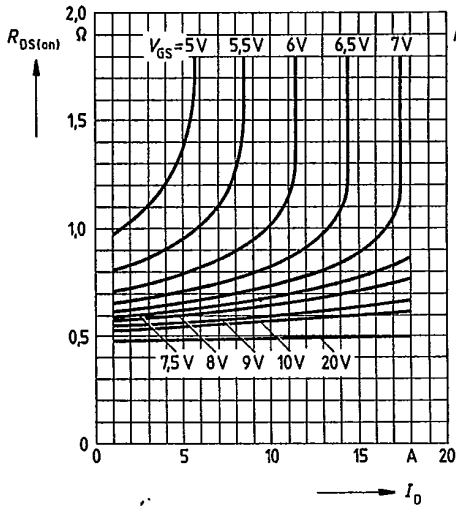
| | | | | | | |
|---|--------------|-----|-----|-----|----|---|
| Forward transconductance | g_{fs} | 2,7 | 5,0 | — | S | $V_{DS} = 25V$ $I_D = 5,5A$ |
| Input capacitance | C_{iss} | — | 3,8 | 4,9 | nF | $V_{GS} = 0V$ $V_{DS} = 25V$ $f = 1MHz$ |
| Output capacitance | C_{oss} | — | 250 | 400 | pF | |
| Reverse transfer capacitance | C_{rss} | — | 100 | 170 | | |
| Turn-on time t_{on} ($t_{on} = t_{d(on)} + t_r$) | $t_{d(on)}$ | — | 50 | 75 | ns | $V_{CC} = 30V$ $I_D = 2,8A$ $V_{GS} = 10V$ $R_{GS} = 50\Omega$ |
| | t_r | — | 80 | 120 | | |
| Turn-off time t_{off} ($t_{off} = t_{d(off)} + t_f$) | $t_{d(off)}$ | — | 330 | 430 | | |
| | t_f | — | 110 | 140 | | |

Reverse diode

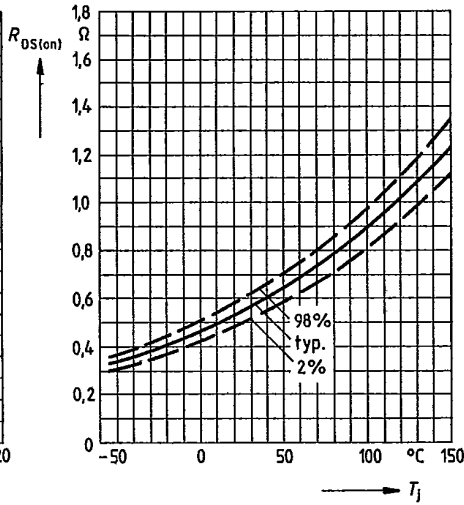
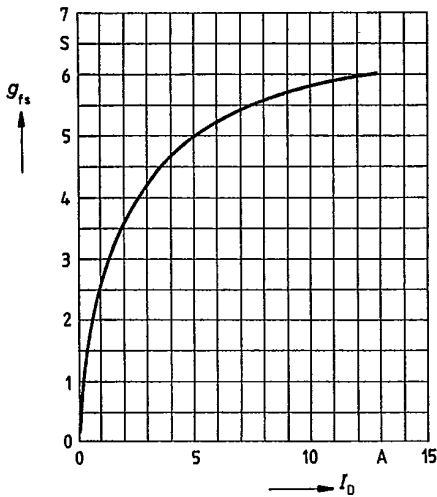
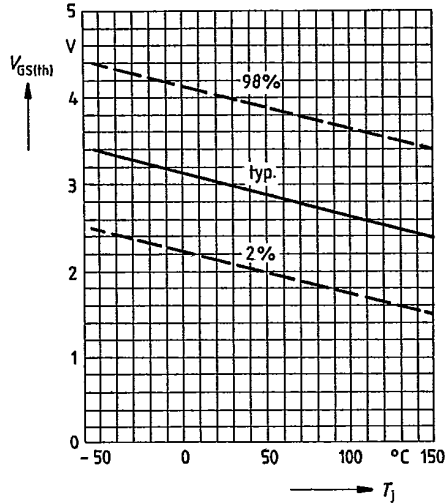
| | | | | | | |
|----------------------------------|-----------|---|-----|-----|---------|--|
| Continuous reverse drain current | I_{DR} | — | — | 9,5 | A | $T_C = 25^\circ\text{C}$ |
| Pulsed reverse drain current | I_{DRM} | — | — | 38 | | |
| Diode forward on-voltage | V_{SD} | — | 1,3 | 1,7 | V | $I_F = 2 \times I_{DR}$ $V_{GS} = 0V, T_j = 25^\circ\text{C}$ |
| Reverse recovery time | t_{rr} | — | 1,2 | — | μs | $T_j = 25^\circ\text{C}$ |
| Reverse recovery charge | Q_{rr} | — | 12 | — | μC | $I_F = I_{DR}$ $d_F/dt = 100A/\mu s$ $V_R = 100V$ |

Power dissipation $P_D = f(T_C)$ Typical output characteristics $I_D = f(V_{DS})$
parameter: 80 μ s pulse test,
 $T_J = 25^\circ\text{C}$ Safe operating area $I_D = f(V_{DS})$
parameter: $D = 0.01$, $T_C = 25^\circ\text{C}$ Typical transfer characteristic $I_D = f(V_{GS})$
parameter: 80 μ s pulse test,
 $V_{DS} = 25\text{V}$, $T_J = 25^\circ\text{C}$ 

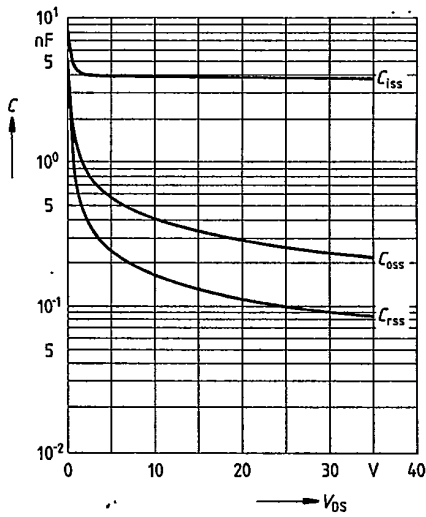
Typical drain-source on-state resistance

 $R_{DS(on)} = f(I_D)$
 parameter: V_{GS} ; $T_J = 25^\circ\text{C}$


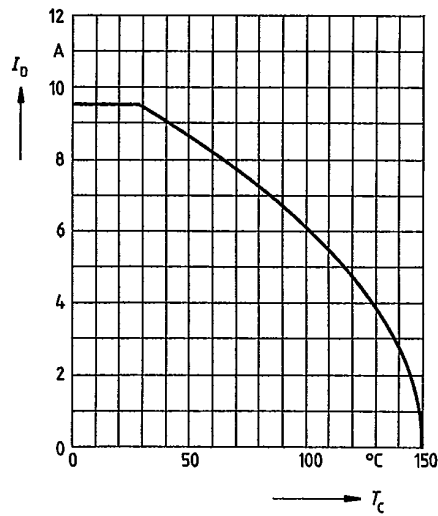
Drain-source on-state resistance

 $R_{DS(on)} = f(T_J)$
 parameter: $I_D = 5.5\text{A}$, $V_{GS} = 10\text{V}$
 (spread)
Typical transconductance $g_{fs} = f(I_D)$
 parameter: 80 μs pulse test,
 $V_{DS} = 25\text{V}$, $T_J = 25^\circ\text{C}$
Gate threshold voltage $V_{GS(th)} = f(T_J)$
 parameter: $V_{DS} = V_{GS}$, $I_D = 1\text{mA}$
 (spread)


Typical capacitances $C = f(V_{DS})$
parameter: $V_{GS} = 0$, $f = 1\text{MHz}$

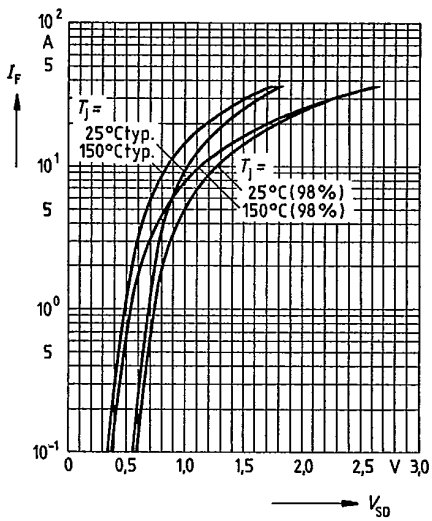


Continuous drain current $I_D = f(T_C)$
parameter: $V_{GS} \geq 10\text{V}$

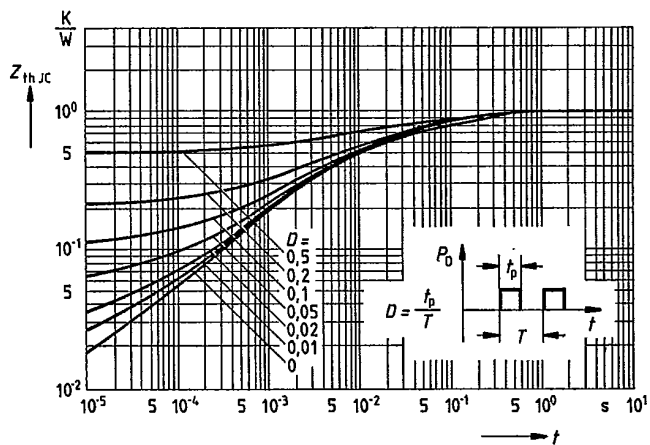


Forward characteristic of reverse diode

$I_F = f(V_{SD})$
parameter: T_j , $t_p = 80\text{ }\mu\text{s}$
(spread)



Transient thermal impedance $Z_{thJC} = f(t)$
 parameter: $D = t_p / T$



Typical gate-charge $V_{GS} = f(Q_{Gate})$
 parameter: $I_{D\ puls} = 14.4A$

