| Parameter | Symbol | Conditions | Values | | | Unit |
|---|---|---|---|---|---|---|
| | | | min. | typ. | max. | |
| **Thermal characteristics** | | | | | | |
| Thermal resistance, junction - case | $R_{thJC}$ | | - | - | 2 | K/W |
| Thermal resistance, junction - ambient | $R_{thJA}$ | Thermal resistance, junction- ambient, leaded | - | - | 62 | |
| **Electrical characteristics,** at $T_j$=25 °C, unless otherwise specified | | | | | | |
| **Static characteristics** | | | | | | |
| DC blocking voltage | $V_{DC}$ | $I_R$=0.05 mA, $T_j$=25 °C | 1200 | - | - | V |
| Diode forward voltage | $V_F$ | $I_F$=2 A, $T_j$=25 °C | - | 1.65 | 1.8 | |
| | | $I_F$=2 A, $T_j$=150 °C | - | 2.55 | - | |
| Reverse current | $I_R$ | $V_R$=1200 V, $T_j$=25 °C | - | 2 | 48 | µA |
| | | $V_R$=1200 V, $T_j$=150 °C | - | 8 | 400 | |
| **AC characteristics** | | | | | | |
| Total capacitive charge | $Q_c$ | $V_R$=400 V, $I_F \leq I_{F,max}$, $di_F/dt$=200 A/µs, $T_j$=150 °C | - | 7.2 | - | nC |
| Switching time[2)] | $t_c$ | | - | - | <10 | ns |
| Total capacitance | $C$ | $V_R$=1 V, $f$=1 MHz | - | 125 | - | pF |
| | | $V_R$=300 V, $f$=1 MHz | - | 12 | - | |
| | | $V_R$=600 V, $f$=1 MHz | - | 10 | - | |

[1)] J-STD20 and JESD22

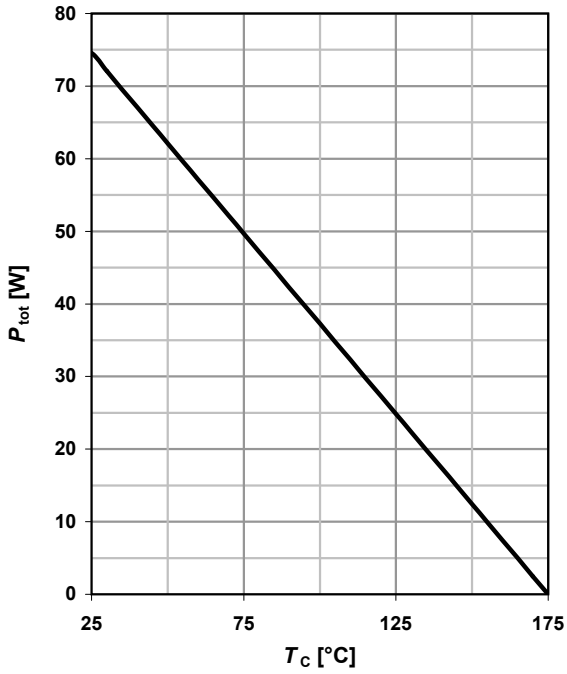
[2)] $t_c$ is the time constant for the capacitive displacement current waveform (independent from $T_j$, $I_{LOAD}$ and di/dt), different from $t_{rr}$ which is dependent on $T_j$, $I_{LOAD}$ and di/dt. No reverse recovery time constant $t_{rr}$ due to absence of minority carrier inje

[3)] Under worst case $Z_{th}$ conditions.

[4)] Only capacitive charge occuring, guaranteed by design

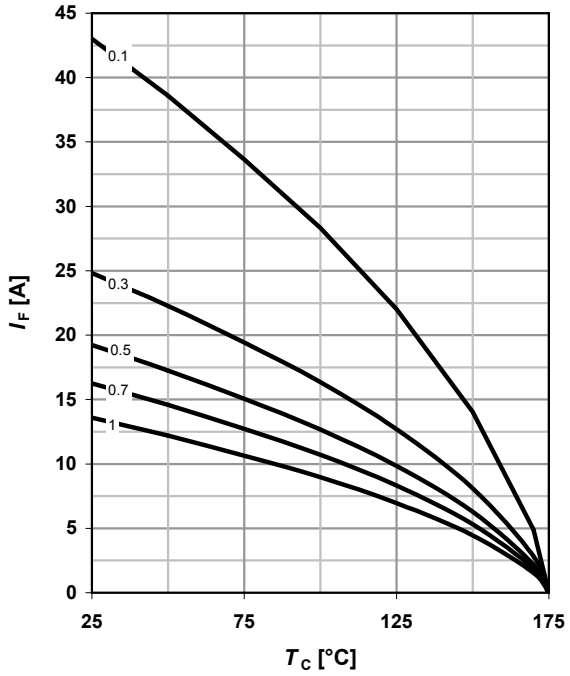
## 1 Power dissipation

$P_{tot}=f(T_C)$




## 2 Diode forward current

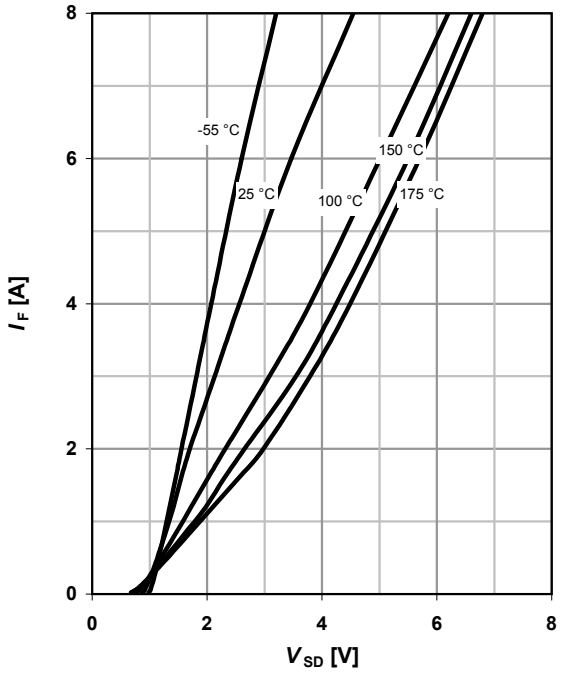
$I_F=f(T_C)$[3]; $T_j \leq 175$ °C; parameter: $D = t_p/T$




## 3 Typ. forward characteristic

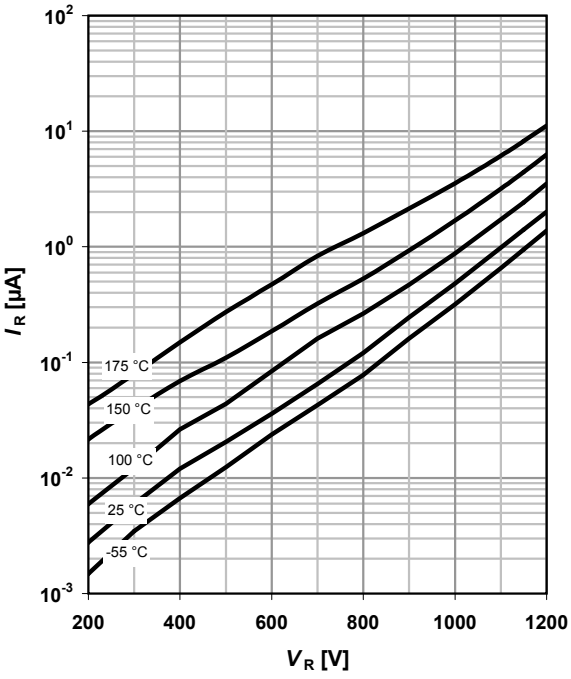
$I_F=f(V_F)$; $t_p=400$ µs

parameter: $T_j$



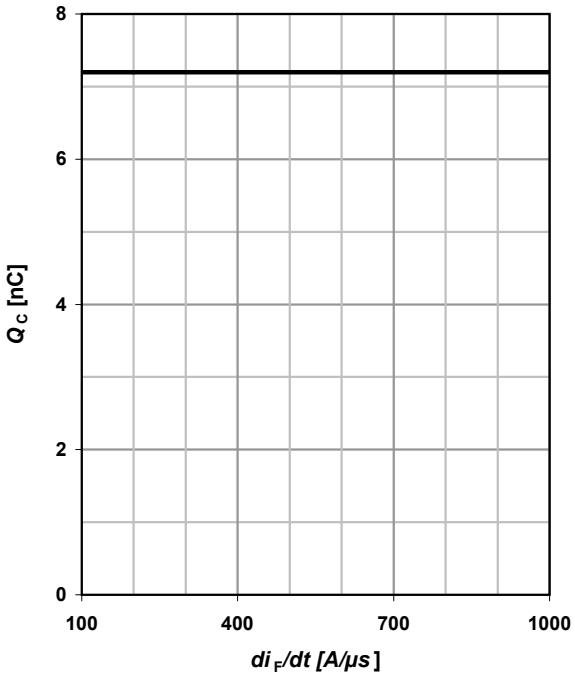

## 4 Typ. Reverse current vs. reverse voltage

$E_C=f(V_R)$



## 5 Typ. capacitance charge vs. current slope

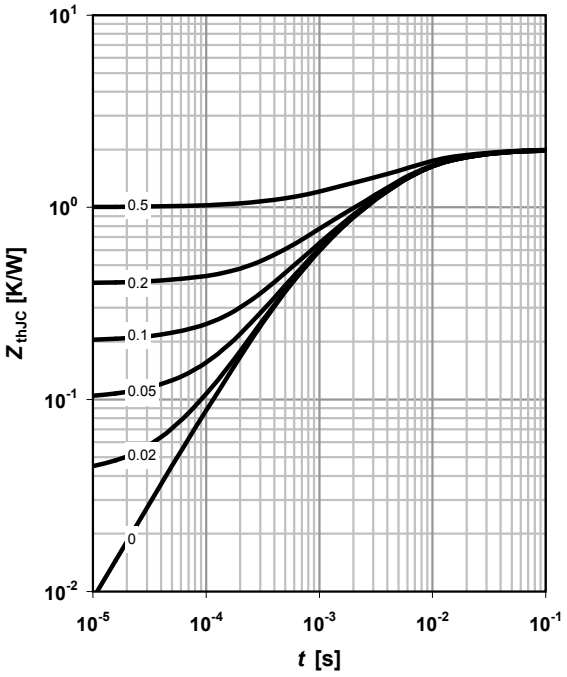
$Q_C=f(di_F/dt)$[4]; $T_j$=150 °C; $I_F \le I_{F,max}$




## 6 Transient thermal impedance

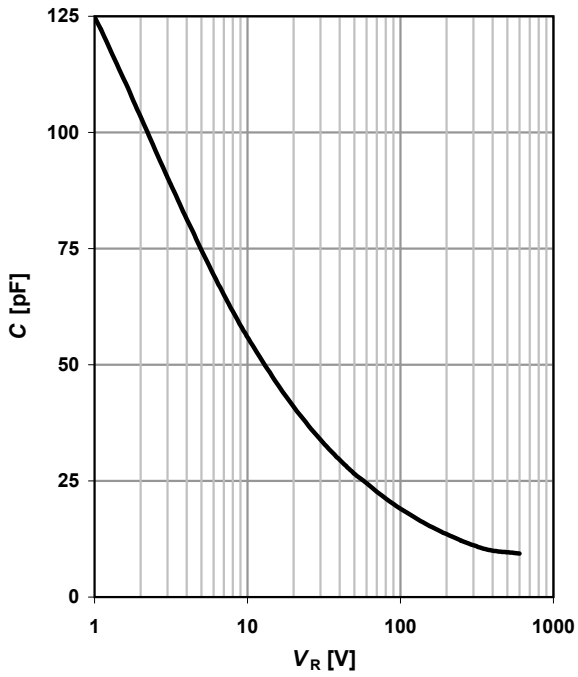
$Z_{thJC}=f(t_p)$

parameter: $D=t_p/T$



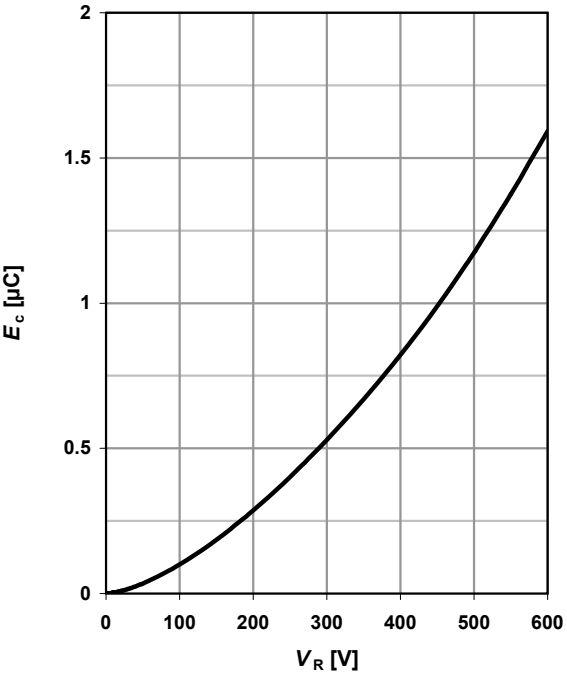

## 7 Typ. capacitance vs. reverse voltage

$C=f(V_R)$; $T_C$=25 °C, $f$=1 MHz

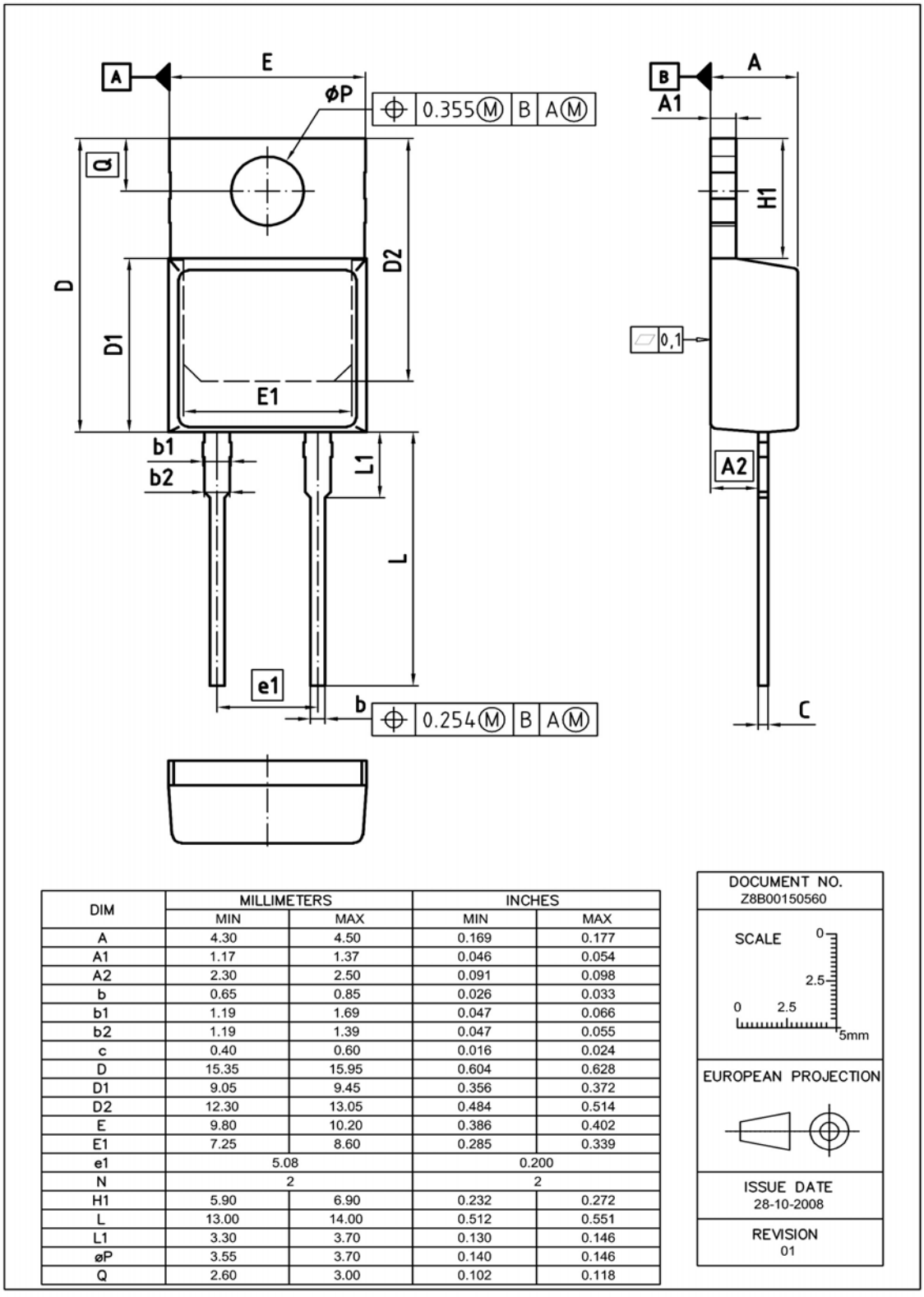



## 8 Typ. $C$ stored energy

$E_C=f(V_R)$



**PG-TO220-2: Outline**




| DIM | MILLIMETERS | | INCHES | |
|---|---|---|---|---|
| | MIN | MAX | MIN | MAX |
| A | 4.30 | 4.50 | 0.169 | 0.177 |
| A1 | 1.17 | 1.37 | 0.046 | 0.054 |
| A2 | 2.30 | 2.50 | 0.091 | 0.098 |
| b | 0.65 | 0.85 | 0.026 | 0.033 |
| b1 | 1.19 | 1.69 | 0.047 | 0.066 |
| b2 | 1.19 | 1.39 | 0.047 | 0.055 |
| c | 0.40 | 0.60 | 0.016 | 0.024 |
| D | 15.35 | 15.95 | 0.604 | 0.628 |
| D1 | 9.05 | 9.45 | 0.356 | 0.372 |
| D2 | 12.30 | 13.05 | 0.484 | 0.514 |
| E | 9.80 | 10.20 | 0.386 | 0.402 |
| E1 | 7.25 | 8.60 | 0.285 | 0.339 |
| e1 | 5.08 | | 0.200 | |
| N | 2 | | 2 | |
| H1 | 5.90 | 6.90 | 0.232 | 0.272 |
| L | 13.00 | 14.00 | 0.512 | 0.551 |
| L1 | 3.30 | 3.70 | 0.130 | 0.146 |
| øP | 3.55 | 3.70 | 0.140 | 0.146 |
| Q | 2.60 | 3.00 | 0.102 | 0.118 |

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SCALE 0 2.5 0 2.5 5mm

EUROPEAN PROJECTION

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01

Dimensions in mm/inches

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