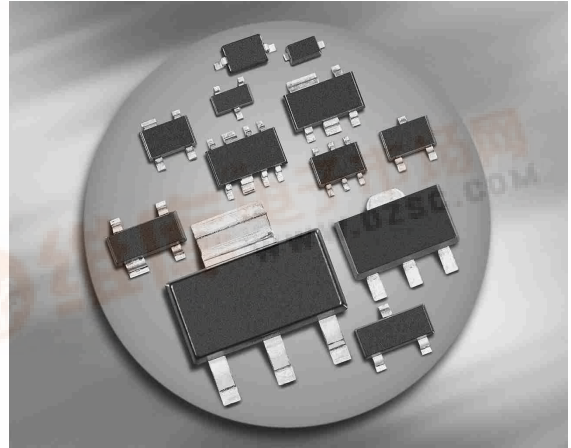




BAT62...

Silicon Schottky Diode

- Low barrier diode for detectors up to GHz frequencies



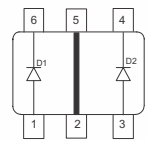
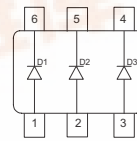
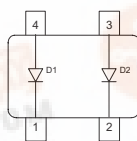
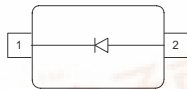
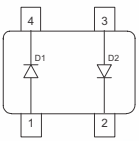
BAT62

BAT62-02L
BAT62-02W
BAT62-03W

BAT62-07W
BAT62-07L4

BAT62-08S

BAT62-09S



ESD: Electrostatic discharge sensitive device, observe handling precaution!

| Type | Package | Configuration | L_S (nH) | Marking |
|------------|----------|-------------------------------|------------|---------|
| BAT62 | SOT143 | anti-parallel pair | 2 | 62s |
| BAT62-02L* | TSLP-2-1 | single, leadless | 0.4 | L |
| BAT62-02W | SCD80 | single | 0.6 | 62 |
| BAT62-03W | SOD323 | single | 1.8 | L |
| BAT62-07L4 | TSLP-4-4 | parallel pair, leadless | 0.4 | 62 |
| BAT62-07W | SOT343 | parallel pair | 1.8 | 62s |
| BAT62-08S | SOT363 | parallel triple | 1.6 | 62s |
| BAT62-09S* | SOT363 | parallel pair, high isolation | 1.6 | 69s |

*Preliminary Data



Maximum Ratings at $T_A = 25^\circ\text{C}$, unless otherwise specified

| Parameter | Symbol | Value | Unit |
|--|------------------|-------------|------------------|
| Diode reverse voltage | V_R | 40 | V |
| Forward current | I_F | 20 | mA |
| Total power dissipation | P_{tot} | | mW |
| BAT62, $T_S \leq 85^\circ\text{C}$ | | 100 | |
| BAT62-02L, -07L4, -03W, $T_S \leq 108^\circ\text{C}$ | | 100 | |
| BAT62-02W, $T_S \leq 109^\circ\text{C}$ | | 100 | |
| BAT62-07W, $T_S \leq 103^\circ\text{C}$ | | 100 | |
| BAT62-08S, -09S, $T_S \leq 105^\circ\text{C}$ | | 100 | |
| Junction temperature | T_j | 150 | $^\circ\text{C}$ |
| Storage temperature | T_{stg} | -55 ... 150 | |

Thermal Resistance

| Parameter | Symbol | Value | Unit |
|--|-------------------|-------------------|------|
| Junction - soldering point ¹⁾ | R_{thJS} | | K/W |
| BAT62 | | ≤ 650 | |
| BAT62-02L, -07L4, -03W | | ≤ 420 | |
| BAT62-02W | | ≤ 410 | |
| BAT62-07W | | ≤ 470 | |
| BAT62-08S | | ≤ 450 | |
| BAT62-09S | | $\leq \text{tdb}$ | |

Electrical Characteristics at $T_A = 25^\circ\text{C}$, unless otherwise specified

| Parameter | Symbol | Values | | | Unit |
|---|--------------|--------|------|------|---------------|
| | | min. | typ. | max. | |
| DC Characteristics | | | | | |
| Reverse current $V_R = 40\text{ V}$ | I_R | - | - | 10 | μA |
| Forward voltage $I_F = 2\text{ mA}$ | V_F | - | 0.58 | 1 | V |
| Forward voltage matching ²⁾ $I_F = 2\text{ mA}$ | ΔV_F | - | - | 20 | mV |

¹⁾For calculation of R_{thJA} please refer to Application Note Thermal Resistance

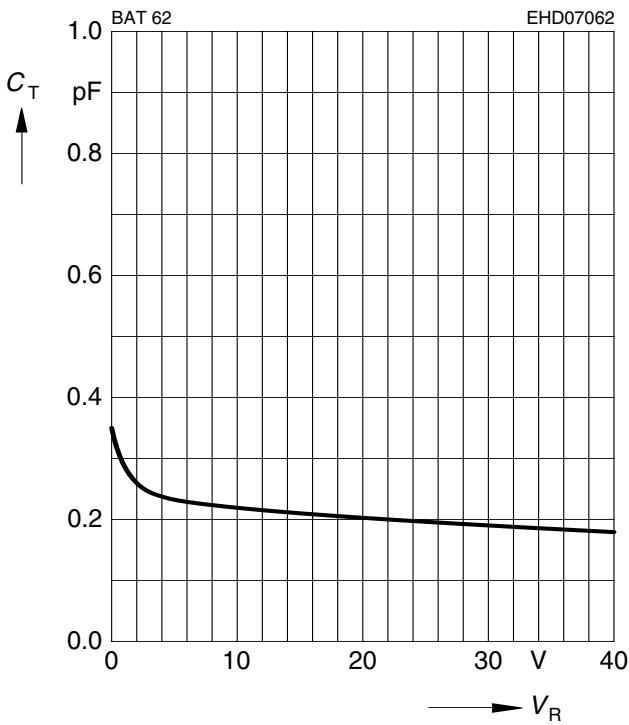
²⁾ ΔV_F is the difference between lowest and highest V_F in a multiple diode component.

Electrical Characteristics at $T_A = 25^\circ\text{C}$, unless otherwise specified

| Parameter | Symbol | Values | | | Unit |
|--|--------|--------|------|------|------------|
| | | min. | typ. | max. | |
| AC Characteristics | | | | | |
| Diode capacitance $V_R = 0\text{ V}, f = 1\text{ MHz}$ | C_T | - | 0.35 | 0.6 | pF |
| Differential resistance $V_R = 0\text{ V}, f = 10\text{ kHz}$ | R_0 | - | 225 | - | k Ω |

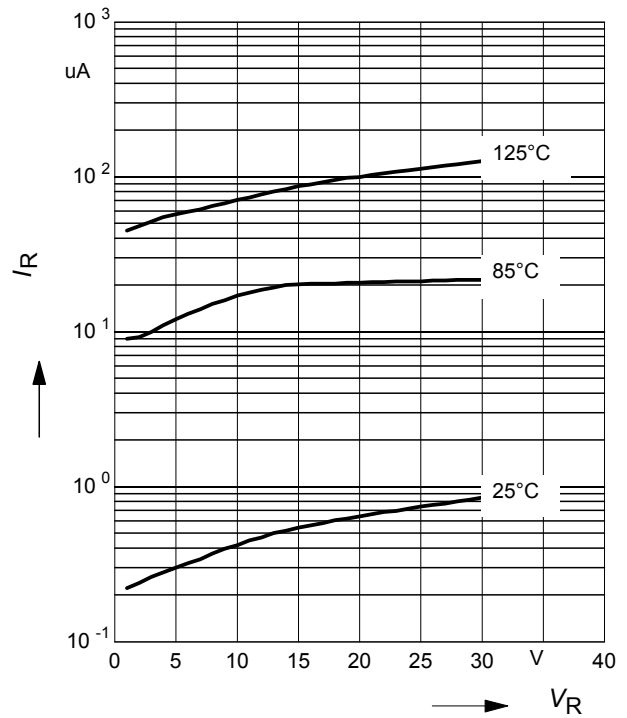
Diode capacitance $C_T = f(V_R)$

$f = 1\text{MHz}$



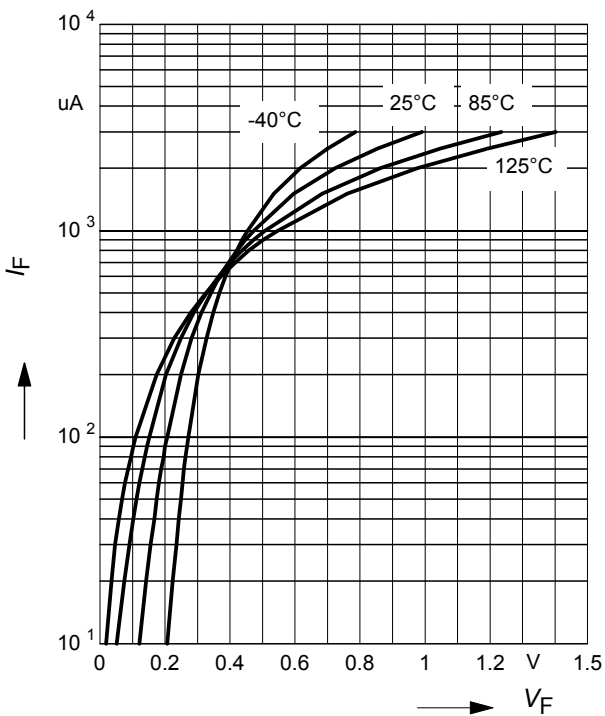
Reverse current $I_R = f(V_R)$

$T_A = \text{Parameter}$



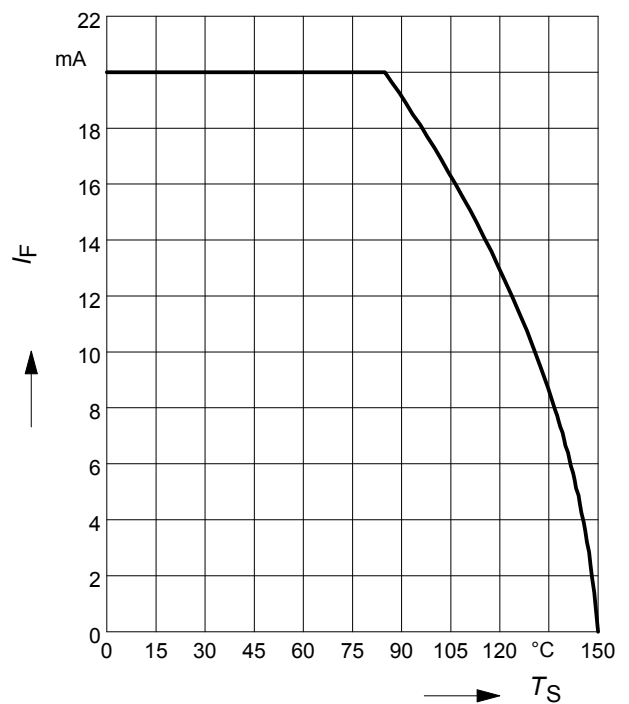
Forward current $I_F = f(V_F)$

$T_A = \text{Parameter}$



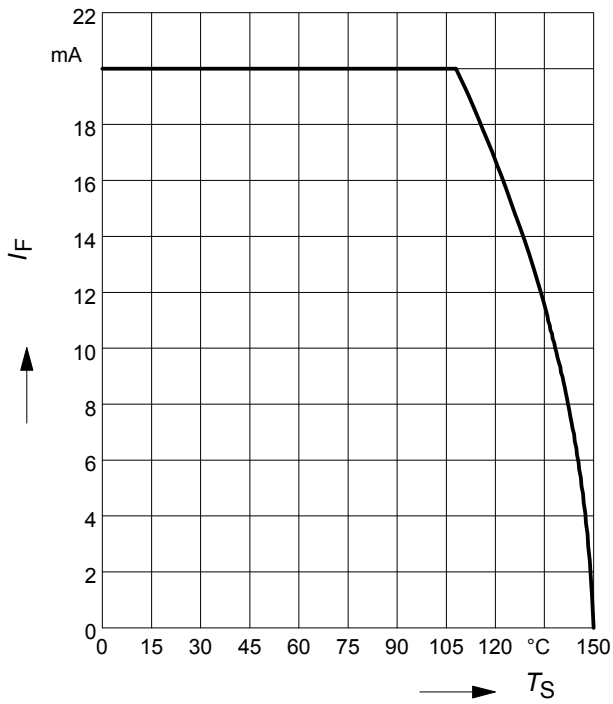
Forward current $I_F = f(T_S)$

BAT62



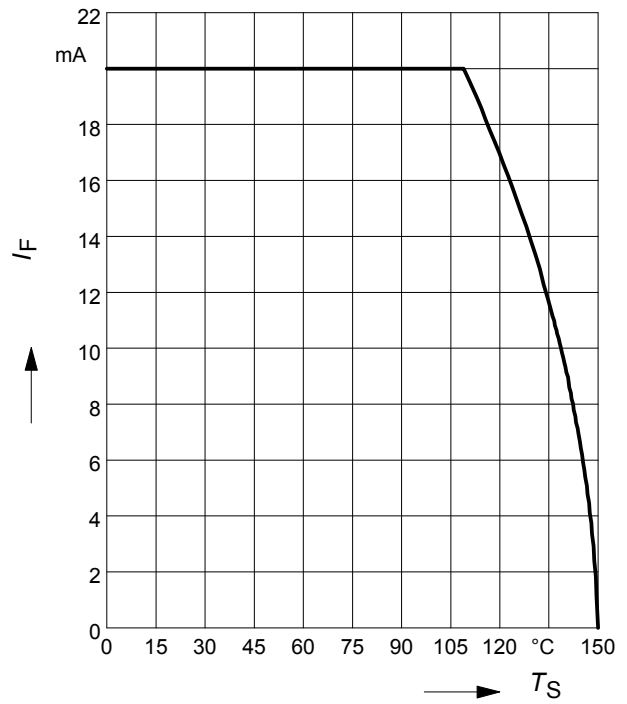
Forward current $I_F = f(T_S)$

BAT62-02L, -07L4



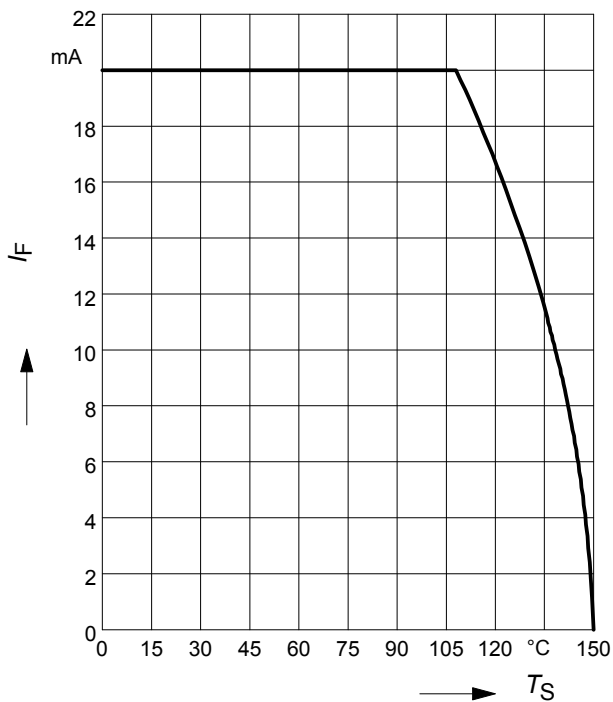
Forward current $I_F = f(T_S)$

BAT62-02W



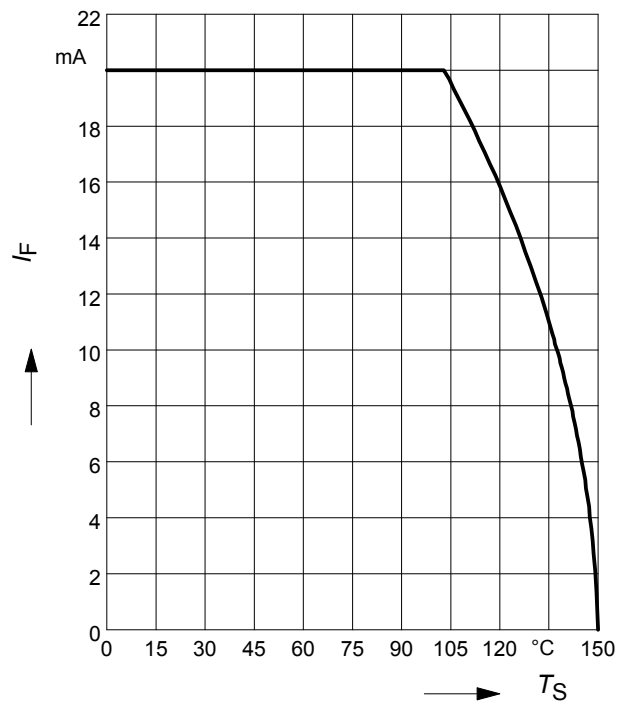
Forward current $I_F = f(T_S)$

BAT62-03W



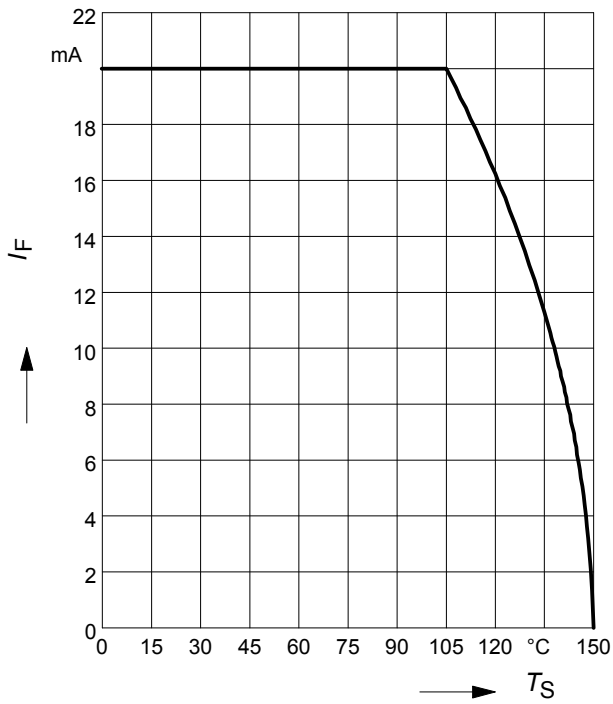
Forward current $I_F = f(T_S)$

BAT62-07W



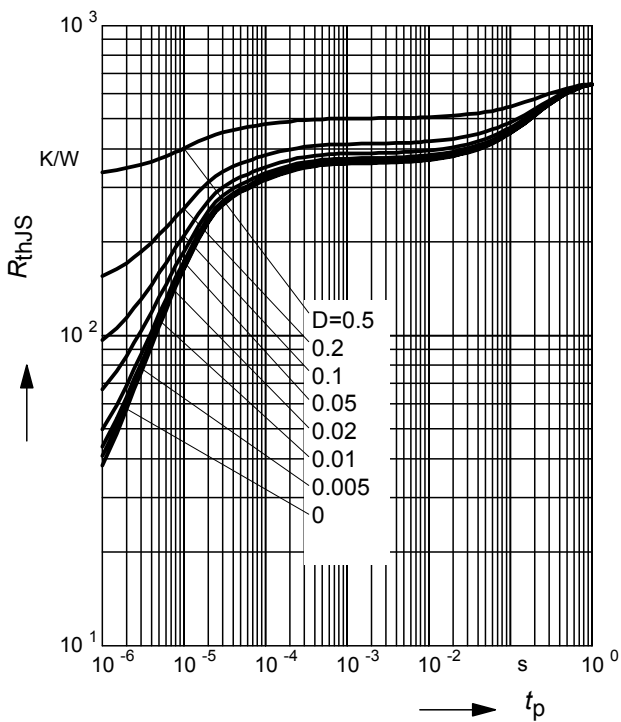
Forward current $I_F = f(T_S)$

BAT62-08S



Permissible Puls Load $R_{thJS} = f(t_p)$

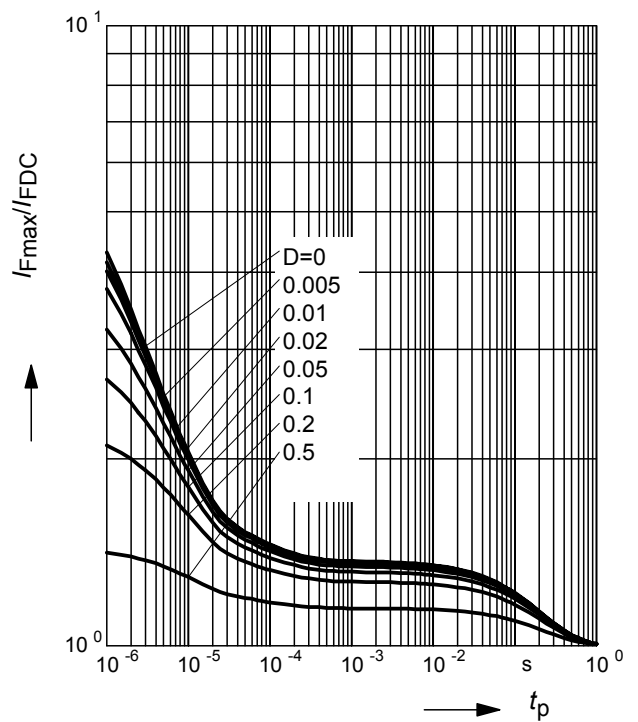
BAT62



Permissible Pulse Load

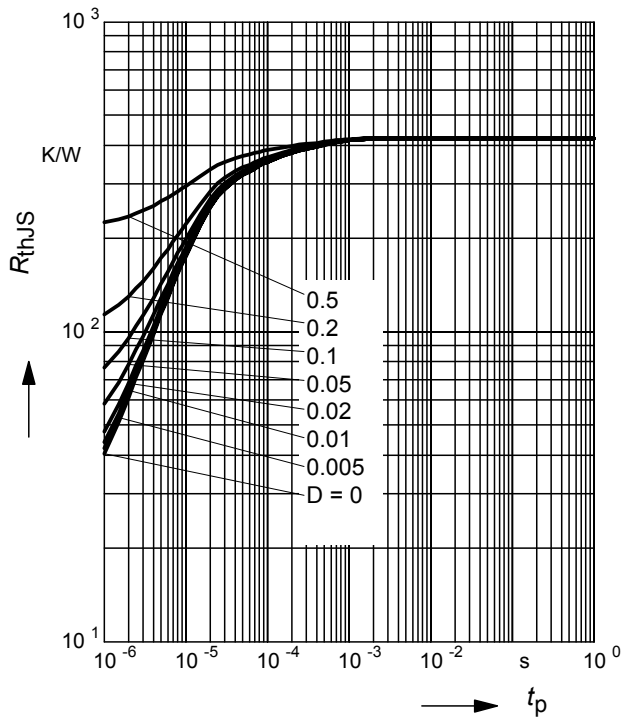
$I_{Fmax} / I_{FDC} = f(t_p)$

BAT62



Permissible Puls Load $R_{thJS} = f(t_p)$

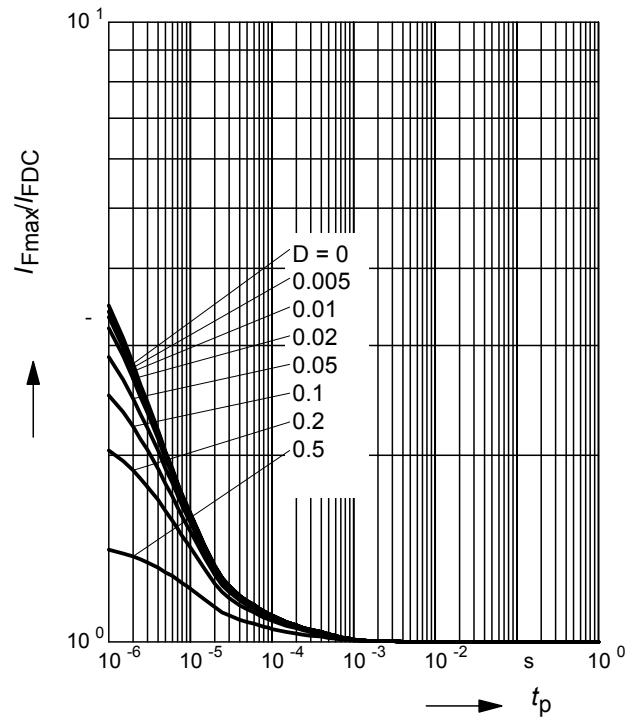
BAT62-02L, -07L4



Permissible Pulse Load $I_{Fmax}/I_{FDC} = f(t_p)$

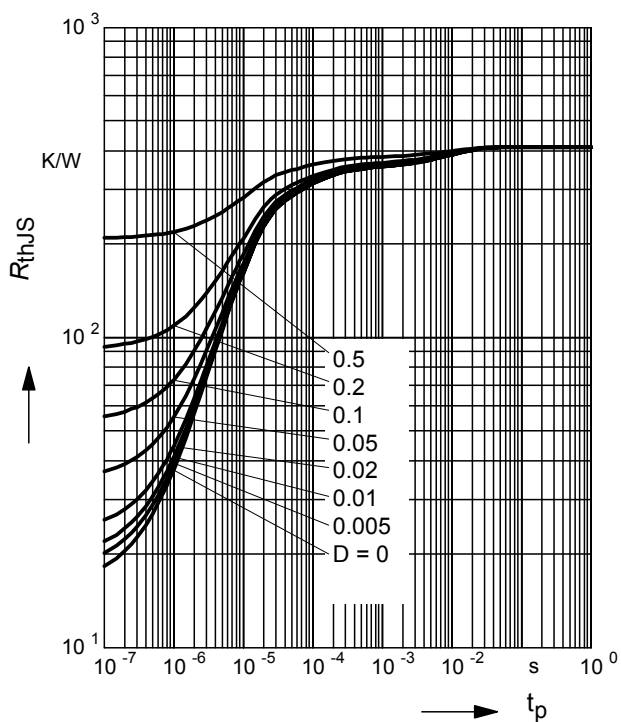
$I_{Fmax}/I_{FDC} = f(t_p)$

BAT62-02L, -07L4



Permissible Puls Load $R_{thJS} = f(t_p)$

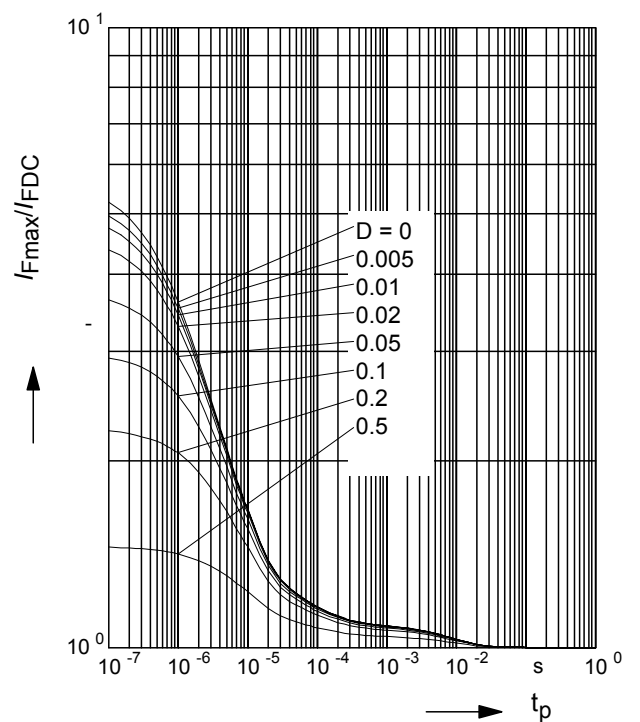
BAT62-02W



Permissible Pulse Load $I_{Fmax}/I_{FDC} = f(t_p)$

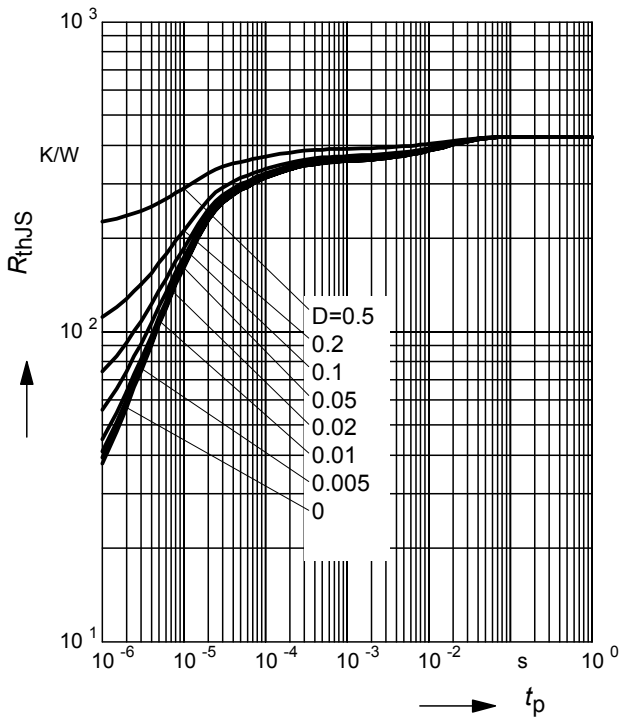
$I_{Fmax}/I_{FDC} = f(t_p)$

BAT62-02W



Permissible Puls Load $R_{thJS} = f(t_p)$

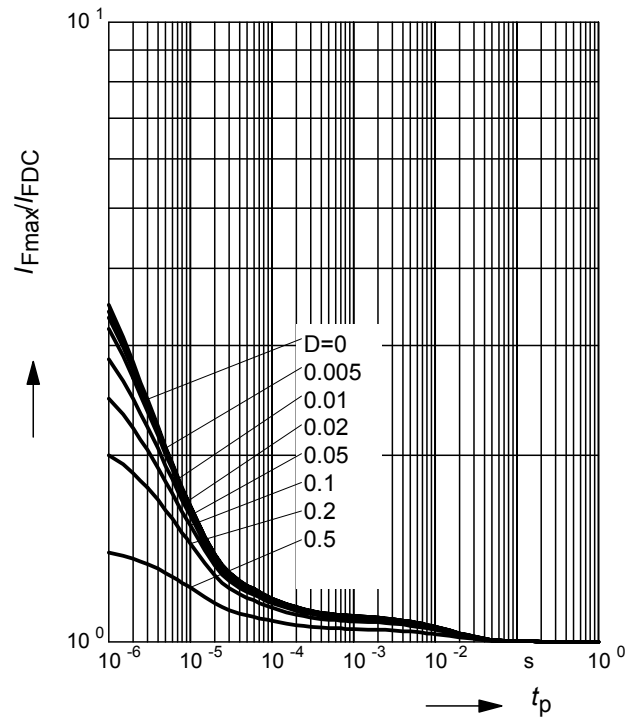
BAT62-03W



Permissible Pulse Load $I_{Fmax}/I_{FDC} = f(t_p)$

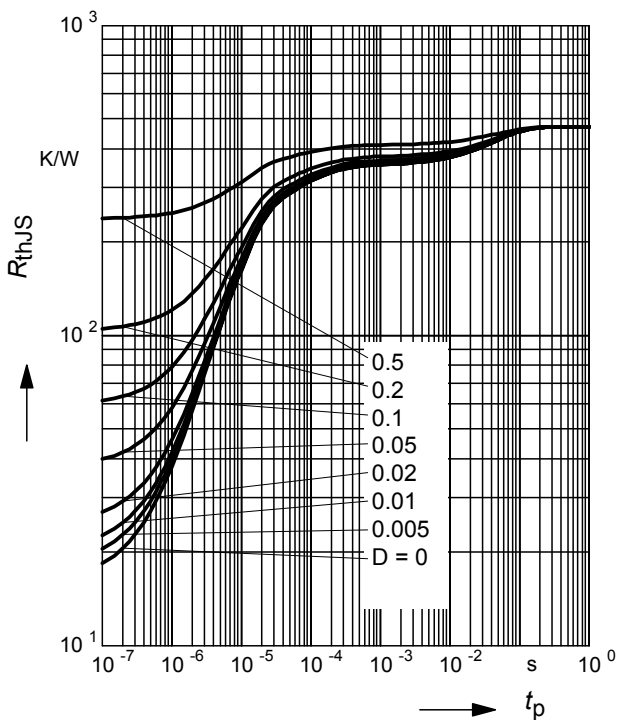
$I_{Fmax}/I_{FDC} = f(t_p)$

BAT62-03W



Permissible Puls Load $R_{thJS} = f(t_p)$

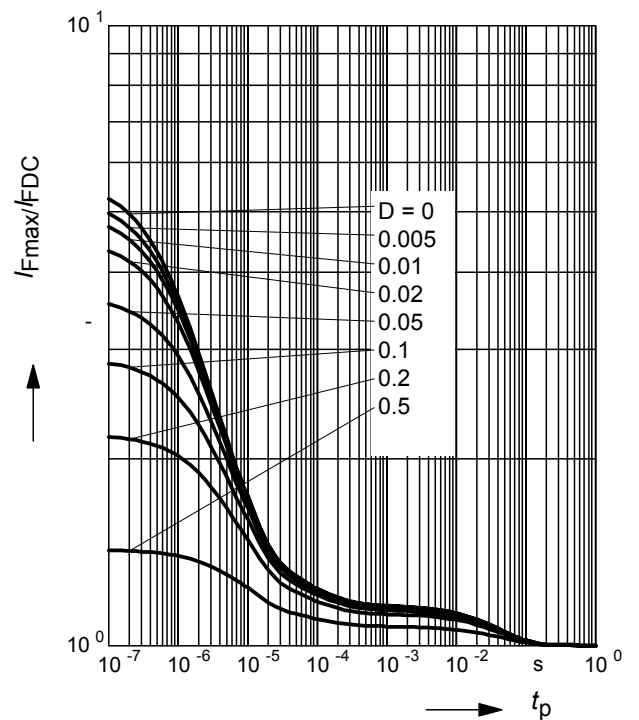
BAT62-07W



Permissible Pulse Load $I_{Fmax}/I_{FDC} = f(t_p)$

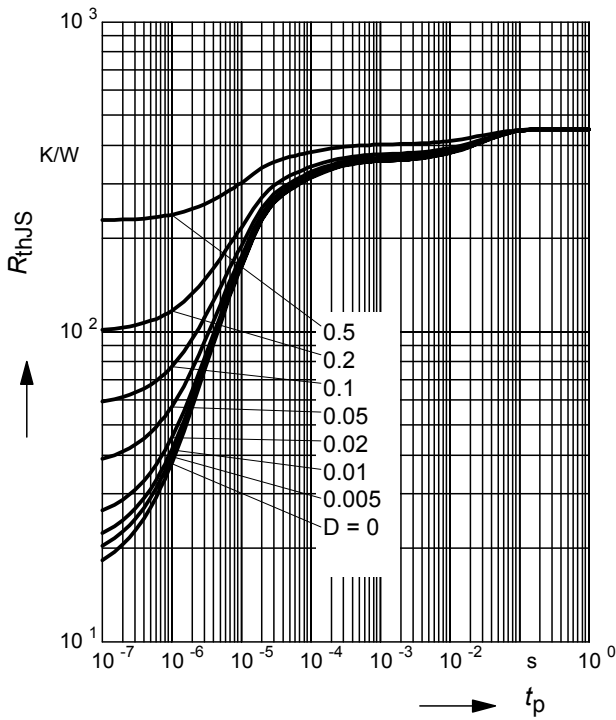
$I_{Fmax}/I_{FDC} = f(t_p)$

BAT62-07W



Permissible Puls Load $R_{thJS} = f(t_p)$

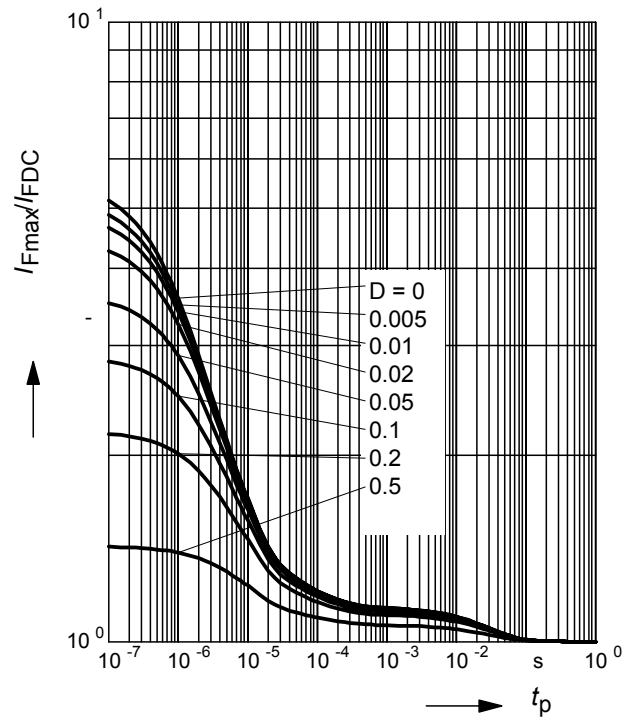
BAT62-08S



Permissible Pulse Load

$I_{Fmax} / I_{FDC} = f(t_p)$

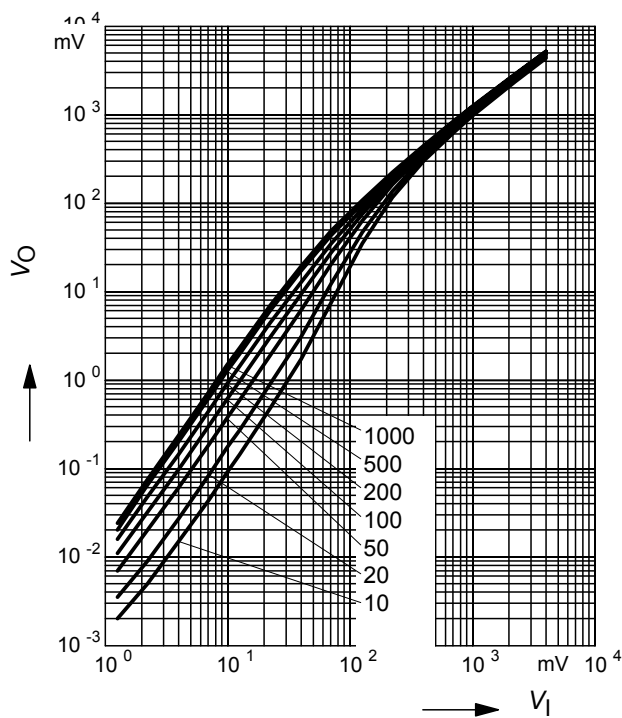
BAT62-08S



Rectifier voltage $V_{out} = f(V_{in})$

$f = 900\text{MHz}$

$R_L = \text{Parameter in k}\Omega$



Testcircuit

