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# FAST RECOVERY DIODE

# ARF695

***FOR IGBT, IEGT, GCT APPLICATIONS***

***SNUBBERLESS OPERATION***

***LOW LOSSES SOFT RECOVERY***

| | |
|---|---|
| Repetitive voltage up to | **6000 V** |
| Mean forward current | **901 A** |
| Surge current | **18 kA** |

***FINAL SPECIFICATION***

July 13 - Issue: 0

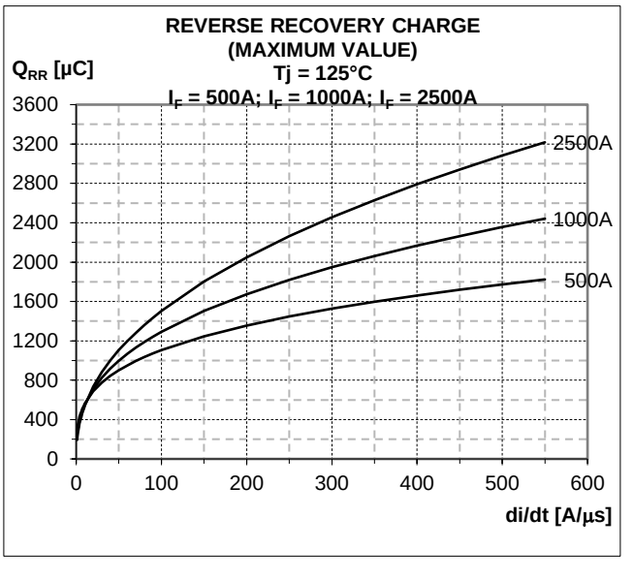
| Symbol | Characteristic | Conditions | Tj [°C] | Value | Unit |
|---|---|---|---|---|---|
| **BLOCKING** | | | | | |
| $V_{RRM}$ | Repetitive peak reverse voltage | | 125 | 6000 | V |
| $V_{RSM}$ | Non-repetitive peak reverse voltage | | 125 | 6100 | V |
| $I_{RRM}$ | Repetitive peak reverse current | $V=V_{RRM}$ | 125 | 75 | mA |
| $V_{DC\ LINK}$ | Permanent DC voltage | | 125 | 3200 | V |
| **CONDUCTING** | | | | | |
| $I_{F(AV)}$ | Mean forward current | 180° sin, 50 Hz, Th=55°C, double side cooled | | 901 | A |
| $I_{F(AV)}$ | Mean forward current | 180° sin, 50 Hz, Tc=85°C, double side cooled | | 738 | A |
| $I_{FSM}$ | Surge forward current | Sine wave, 10 ms with reverse voltage up to 50% VRSM | 125 | 18 | kA |
| $I^2t$ | $I^2t$ | | | 1620 x $10^3$ | $A^2s$ |
| $V_{FM}$ | Forward voltage | Forward current = 1570 A | 125 | 4,53 | V |
| $V_{F(TO)}$ | Threshold voltage | | 125 | 2,10 | V |
| $r_F$ | Forward slope resistance | | 125 | 1,550 | mohm |
| **SWITCHING** | | | | | |
| $Q_{RR}$ | Reverse recovery charge | IF= 1000 A<br>VR= 100 V<br>di/dt= 250 A/µs<br>Chord= 25 % | 125 | 1800 | µC |
| $I_{RR}$ | Peak reverse recovery current | | | 750 | A |
| $t_{RR}$ | Reverse recovery time | IF= 1000 A<br>VR= 350 V<br>di/dt= 500 A/µs<br>Chord= 25 % | 125 | 5 | µs |
| $Q_{RR}$ | Reverse recovery charge | | | 3000 | µC |
| $I_{RR}$ | Peak reverse recovery current | | | 1300 | A |
| S | Softness (s-factor), min | | | ≥ 0,6 | |
| $E_{OFF}$ | Turn off energy dissipation | | | 1 | J |
| $V_{FR}$ | Peak forward recovery | di/dt= 500 A/µs | 125 | ≤ 130 | V |
| **MOUNTING** | | | | | |
| $R_{th(j-h)}$ | Thermal impedance, DC | Junction to heatsink, double side cooled | | 14,0 | °C/kW |
| $R_{th(c-h)}$ | Thermal impedance | Case to heatsink, double side cooled | | 3,0 | °C/kW |
| $T_j$ | Operating junction temperature | | | -30 / 125 | °C |
| F | Mounting force | | | 35 / 40 | kN |
| | Mass | | | 850 | g |

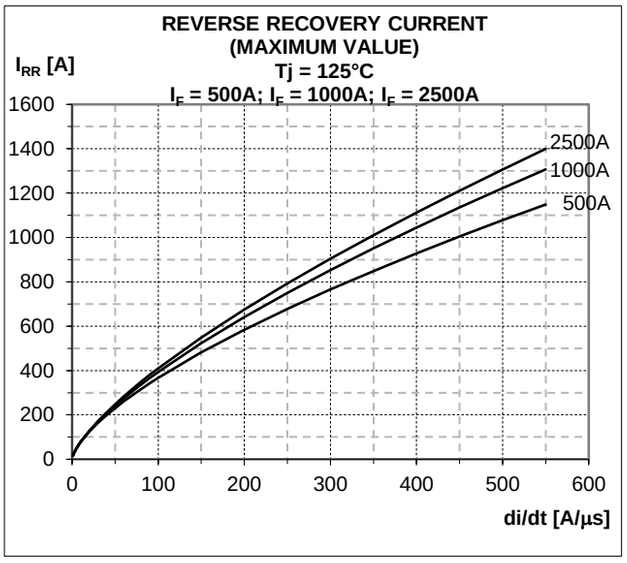
**ORDERING INFORMATION : ARF695 S 60**

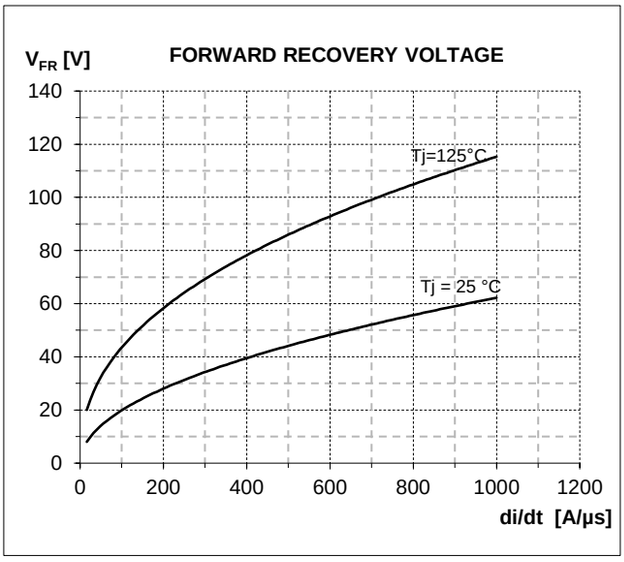
standard specification

VRRM/100

## SWITCHING CHARACTERISTICS



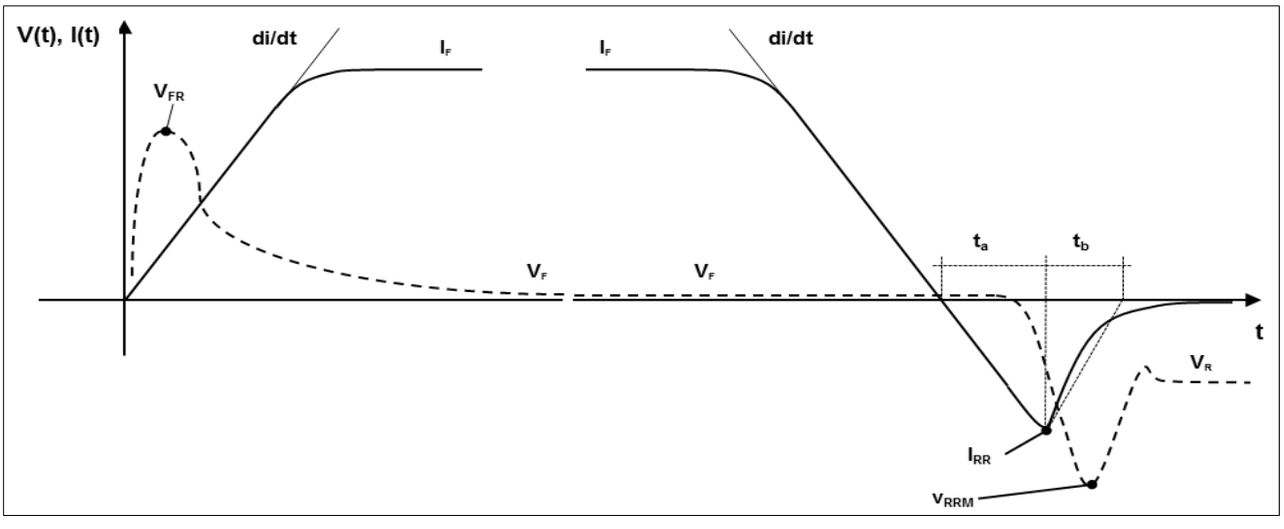

$$t_a = \frac{I_{RR}}{di/dt}$$

$$t_b = t_{RR} - t_a$$

$$S = \frac{t_b}{ta}$$

$$E_{OFF} = V_R * \left[Q_{RR} - \left(I_{RR} * \frac{t_a}{2}\right)\right]$$

$$Q_{RR} = I_{RR} * \frac{t_{RR}}{2}$$



# ARF695 FAST RECOVERY DIODE

POSEICO SPA
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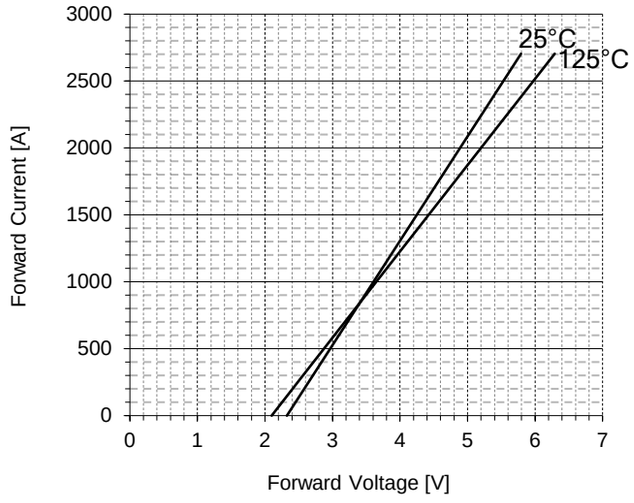
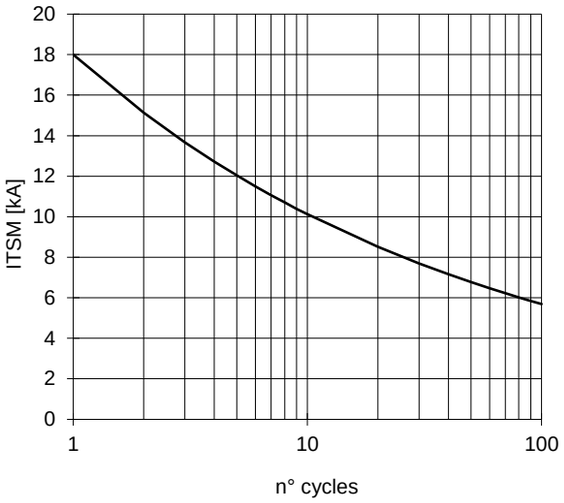
FINAL SPECIFICATION July 13 - Issue: 0

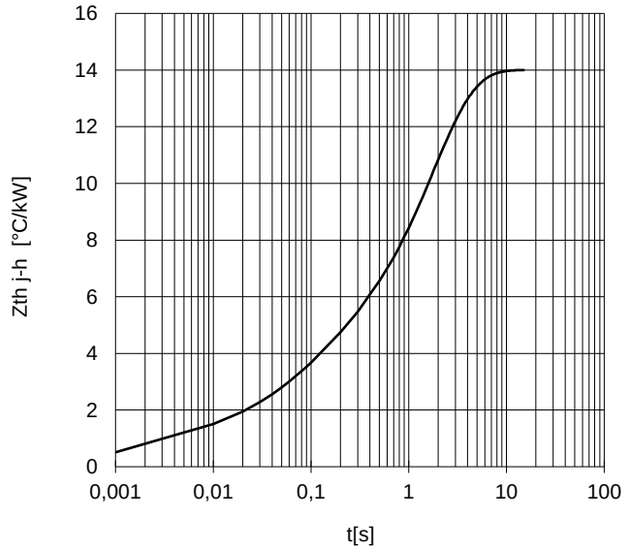
FORWARD CHARACTERISTIC
Tj = 125 °C
Tj = 25°C

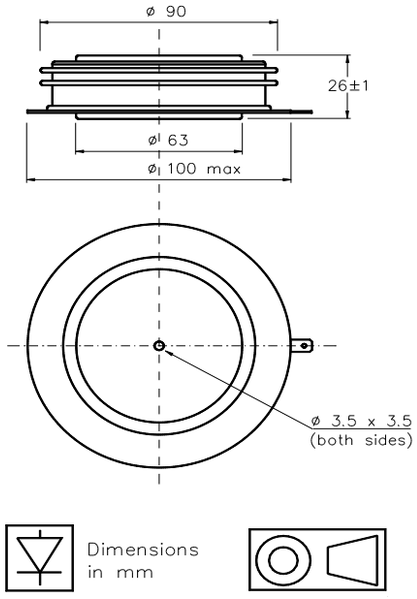



SURGE CHARACTERISTIC
Tj = 125 °C




TRANSIENT THERMAL IMPEDANCE
DOUBLE SIDE COOLED




All the characteristics given in this data sheet are guaranteed only with uniform clamping force, cleaned and lubricated heatsink, surfaces with flatness < .03 mm and roughness < 2 µm.
In the interest of product improvement POSEICO SpA reserves the right to change any data given in this data sheet at any time without previous notice.
If not stated otherwise the maximum value of ratings (simbols over shaded background) and characteristics is reported.

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