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Tx 270318 ANSUSE I -**FAST RECOVERY DIODE****ARF221**

| | |
|--------------------------|---------------|
| Repetitive voltage up to | 1400 V |
| Mean forward current | 415 A |
| Surge current | 5 kA |

FINAL SPECIFICATION

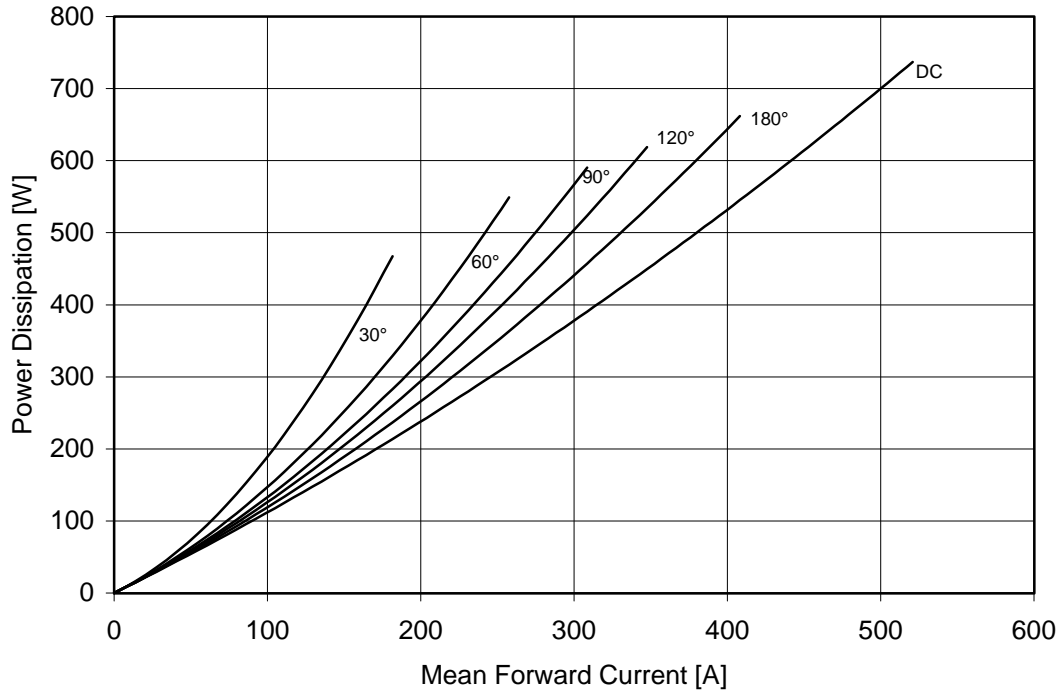
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| Symbol | Characteristic | Conditions | T _j [°C] | Value | Unit |
|----------------------|-------------------------------------|--|------------------------|-----------|------------------|
| BLOCKING | | | | | |
| V _{RRM} | Repetitive peak reverse voltage | | 125 | 1400 | V |
| V _{RSM} | Non-repetitive peak reverse voltage | | 125 | 1500 | V |
| I _{RRM} | Repetitive peak reverse current | V=VRRM | 125 | 50 | mA |
| CONDUCTING | | | | | |
| I _{F(AV)} | Mean forward current | 180° sin ,50 Hz, Th=55°C, double side cooled | | 415 | A |
| I _{F(AV)} | Mean forward current | 180° square,50 Hz,Th=55°C,double side cooled | | 410 | A |
| I _{FSM} | Surge forward current | Sine wave, 10 ms | 125 | 4.5 | kA |
| I ² t | I ² t | reapplied reverse voltage up to 50% VRSM | | 101 x1E3 | A ² s |
| V _{FM} | Forward voltage | Forward current : 600 A | 125 | 1.47 | V |
| V _{F(TO)} | Threshold voltage | | 125 | 1.05 | V |
| r _F | Forward slope resistance | | 125 | 0.70 | mohm |
| SWITCHING | | | | | |
| t _{rr} | Reverse recovery time | I _F = 200 A di/dt = 40 A/μs V _R = 50 V | 125 | 2.0 | μs |
| Q _{rr} | Reverse recovery charge | | | 50 | μC |
| I _{rr} | Peak reverse recovery current | | | 50 | A |
| s | Softness (s-factor), min | | | | |
| V _{FR} | Peak forward recovery | | | | V |
| MOUNTING | | | | | |
| R _{th(j-h)} | Thermal impedance | Junction to heatsink, double side cooled | | 95 | °C/kW |
| T _j | Operating junction temperature | | | -30 / 125 | °C |
| F | Mounting force | | | 4.5 / 5.0 | kN |
| | Mass | | | 55 | g |

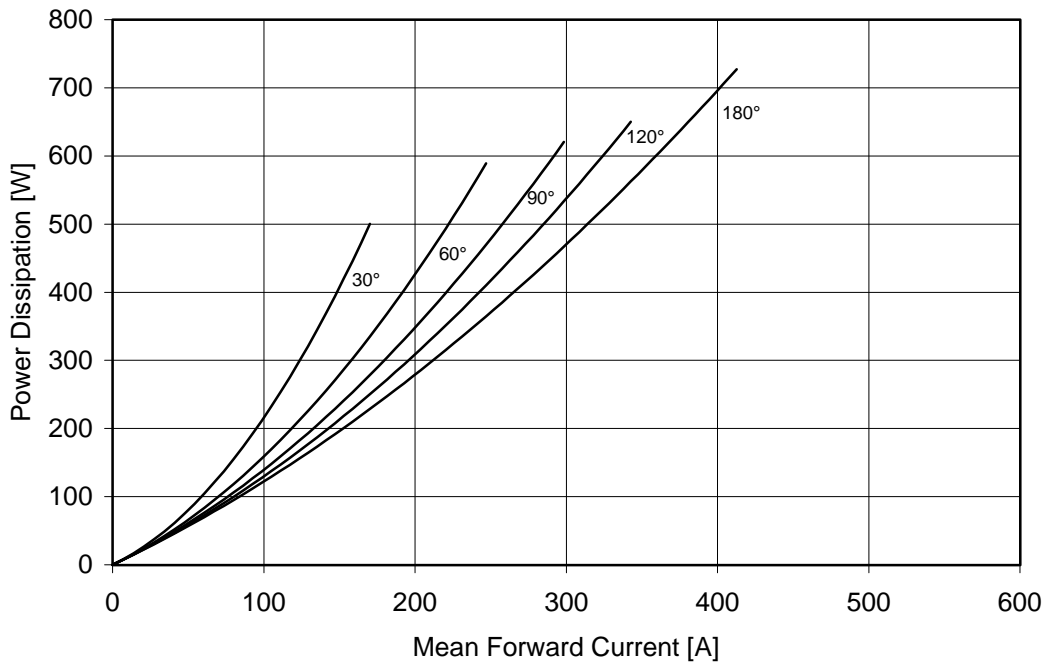
ORDERING INFORMATION : ARF221 S 14standard specification VRRM/100

DISSIPATION CHARACTERISTICS

SQUARE WAVE

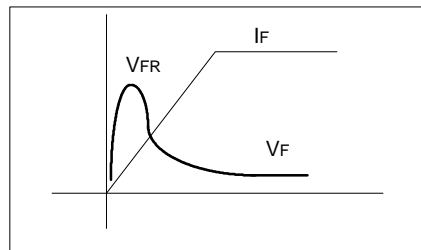
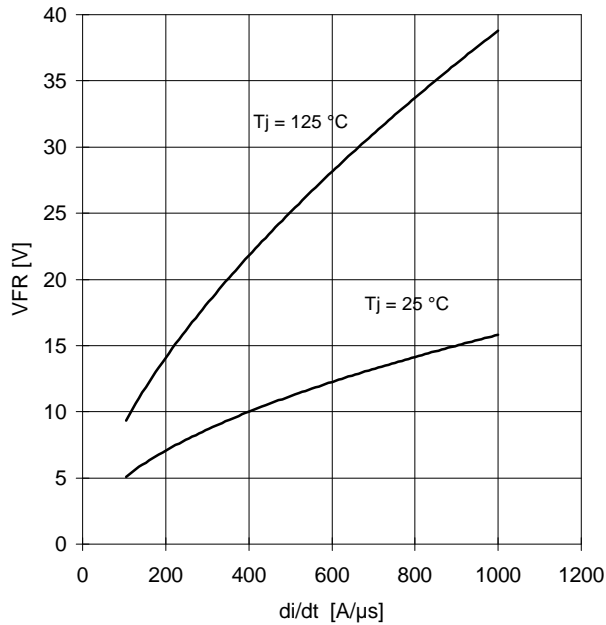


SINE WAVE

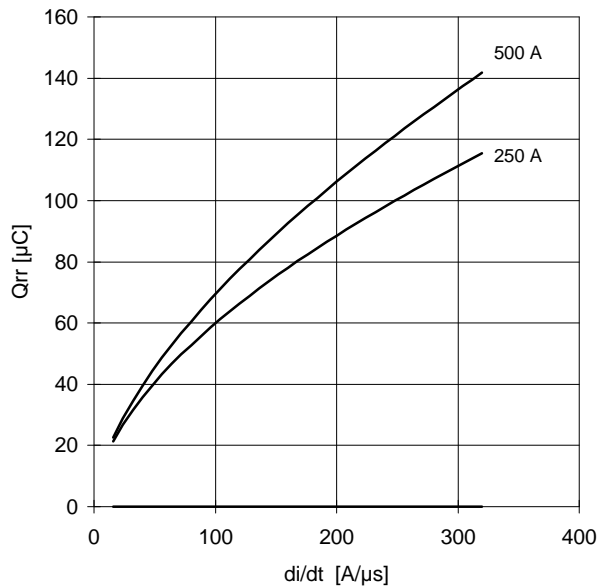


SWITCHING CHARACTERISTICS

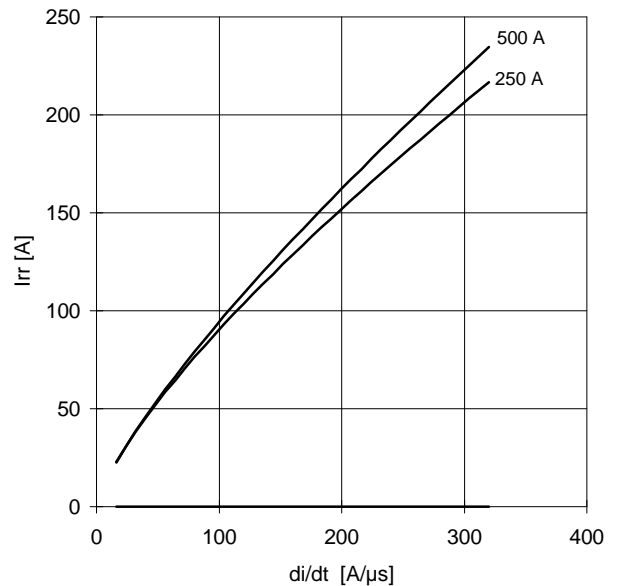
FORWARD RECOVERY VOLTAGE



REVERSE RECOVERY CHARGE
Tj = 125 °C



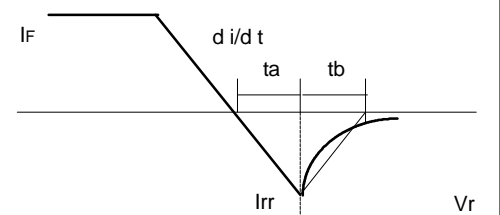
REVERSE RECOVERY CURRENT
Tj = 125 °C



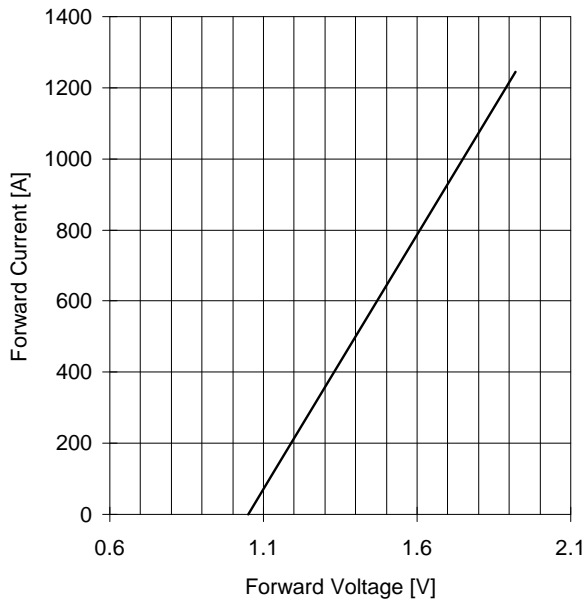
$$t_a = I_{rr} / (di/dt) \quad t_b = t_{rr} - t_a$$

$$\text{Softness (s factor)} \quad s = t_b / t_a$$

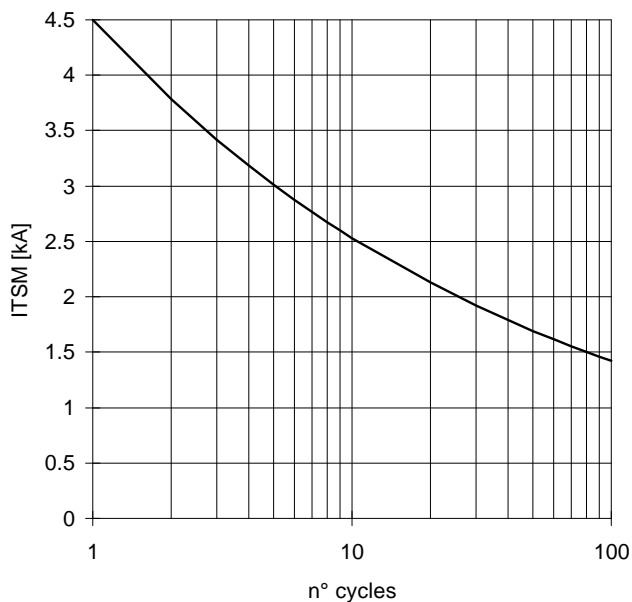
$$\text{Energy dissipation during recovery } E_r = V_r \cdot (Q_{rr} - I_{rr} \cdot t_a / 2)$$



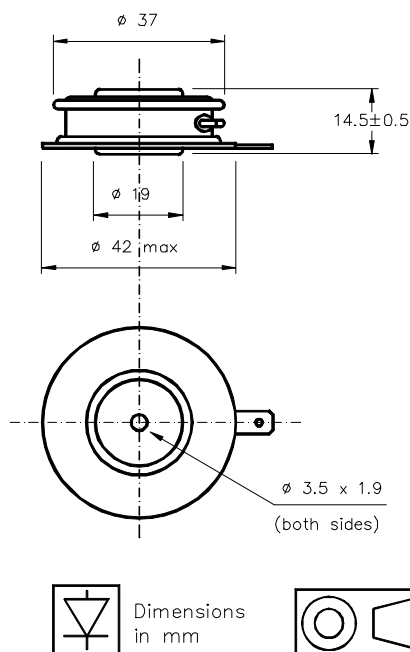
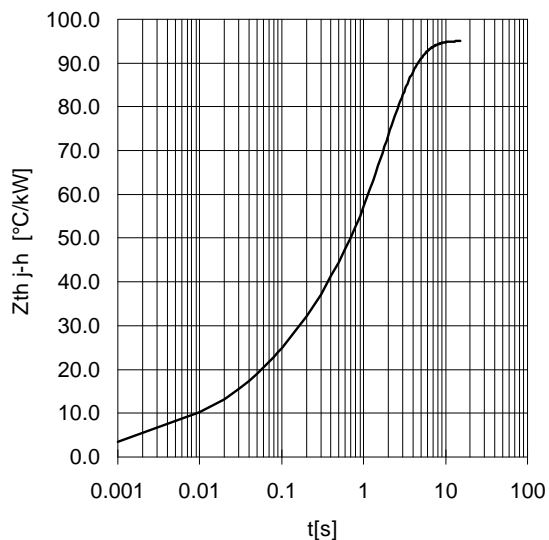
FORWARD CHARACTERISTIC
T_j = 125 °C



SURGE CHARACTERISTIC
T_j = 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 ANSALDO 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 (symbols over shaded background) and characteristics is reported.

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