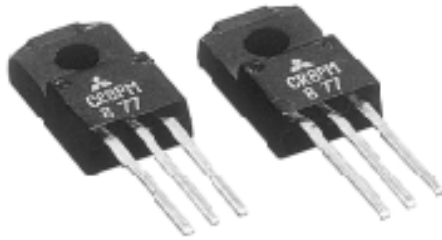


CR8PM

MEDIUM POWER USE
INSULATED TYPE, GLASS PASSIVATION TYPE

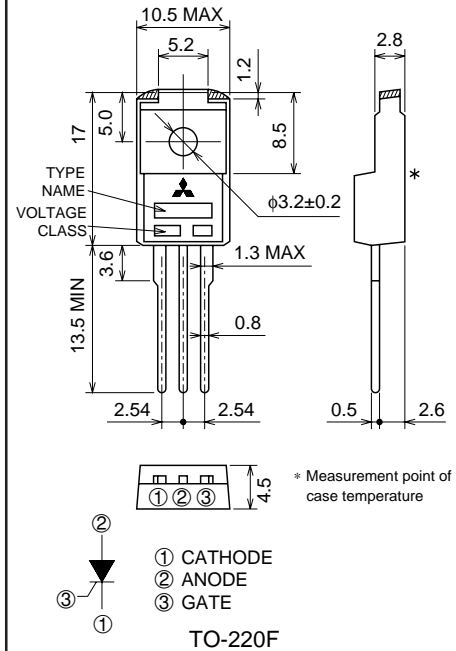
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- I_T (AV) 8A
- V_{DRM} 400V/600V
- I_{GT} 15mA
- V_{iso} 1500V
- UL Recognized: File No. E80276

OUTLINE DRAWING

Dimensions
in mm



APPLICATION

Switching mode power supply, ECR, regulator for autcycle, motor control

MAXIMUM RATINGS ($T_a=25^\circ\text{C}$, unless otherwise noted)

| Symbol | Parameter | Voltage class | | Unit |
|------------|-------------------------------------|---------------|-----|------|
| | | 8 | 12 | |
| V_{RRM} | Repetitive peak reverse voltage | 400 | 600 | V |
| V_{RSM} | Non-repetitive peak reverse voltage | 500 | 720 | V |
| V_R (DC) | DC reverse voltage | 320 | 480 | V |
| V_{DRM} | Repetitive peak off-state voltage | 400 | 600 | V |
| V_D (DC) | DC off-state voltage | 320 | 480 | V |

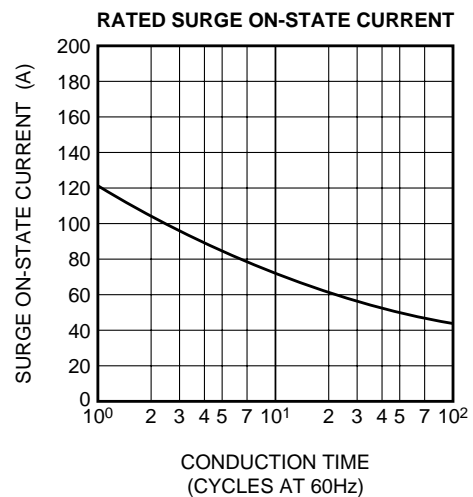
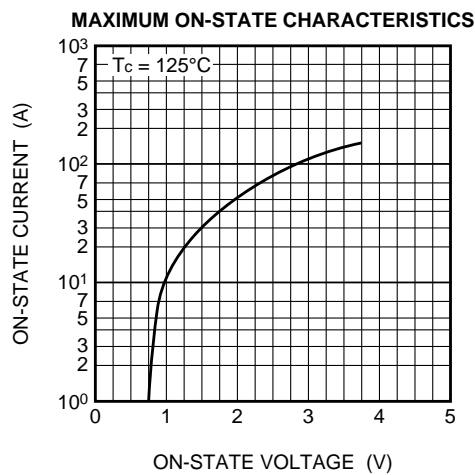
| Symbol | Parameter | Conditions | Ratings | Unit |
|-------------|--------------------------------|--|-----------------|----------------------|
| I_T (RMS) | RMS on-state current | | 12.6 | A |
| I_T (AV) | Average on-state current | Commercial frequency, sine half wave, 180° conduction, $T_c=81^\circ\text{C}$ | 8.0 | A |
| I_{TSM} | Surge on-state current | 60Hz sine half wave 1 full cycle, peak value, non-repetitive | 120 | A |
| I^2_t | I^2_t for fusing | Value corresponding to 1 cycle of half wave 60Hz, surge on-state current | 60 | A^2s |
| PGM | Peak gate power dissipation | | 5.0 | W |
| PG (AV) | Average gate power dissipation | | 0.5 | W |
| V_{FGM} | Peak gate forward voltage | | 6.0 | V |
| V_{RGM} | Peak gate reverse voltage | | 10 | V |
| I_{FGM} | Peak gate forward current | | 2.0 | A |
| T_j | Junction temperature | | $-40 \sim +125$ | $^\circ\text{C}$ |
| T_{stg} | Storage temperature | | $-40 \sim +125$ | $^\circ\text{C}$ |
| — | Weight | Typical value | 2.0 | g |
| V_{iso} | Isolation voltage | $T_a=25^\circ\text{C}$, AC 1 minute, each terminal to case | 1500 | V |

ELECTRICAL CHARACTERISTICS

| Symbol | Parameter | Test conditions | Limits | | | Unit |
|---------------|-----------------------------------|--|--------|------|------|----------------------|
| | | | Min. | Typ. | Max. | |
| IRRM | Repetitive peak reverse current | $T_j=125^{\circ}\text{C}$, V_{RRM} applied | — | — | 2.0 | mA |
| IDRM | Repetitive peak off-state current | $T_j=125^{\circ}\text{C}$, V_{DRM} applied | — | — | 2.0 | mA |
| V_{TM} | On-state voltage | $T_c=25^{\circ}\text{C}$, $I_{TM}=25\text{A}$, instantaneous value | — | — | 1.4 | V |
| V_{GT} | Gate trigger voltage | $T_a=25^{\circ}\text{C}$, $V_D=6\text{V}$, $I_T=1\text{A}$ | — | — | 1.0 | V |
| V_{GD} | Gate non-trigger voltage | $T_j=125^{\circ}\text{C}$, $V_D=1/2V_{DRM}$ | 0.2 | — | — | V |
| I_{GT} | Gate trigger current | $T_j=25^{\circ}\text{C}$, $V_D=6\text{V}$, $I_T=1\text{A}$ | — | — | 15 | mA |
| I_H | Holding current | $T_j=25^{\circ}\text{C}$, $V_D=12\text{V}$ | — | 1.5 | — | mA |
| $R_{th(j-c)}$ | Thermal resistance | Junction to case *1 | — | — | 3.7 | $^{\circ}\text{C/W}$ |

*1. The contact thermal resistance $R_{th(j-c)}$ is 0.5°C/W with greased.

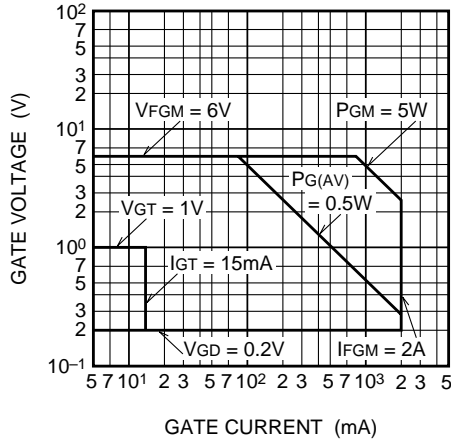
PERFORMANCE CURVES



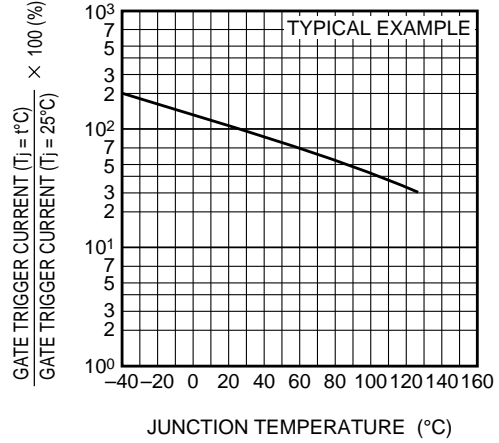
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MEDIUM POWER USE
INSULATED TYPE, GLASS PASSIVATION TYPE

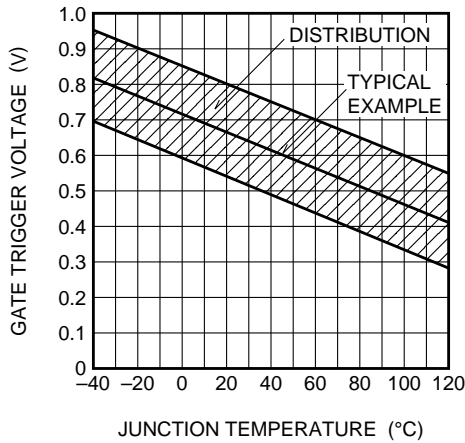
GATE CHARACTERISTICS



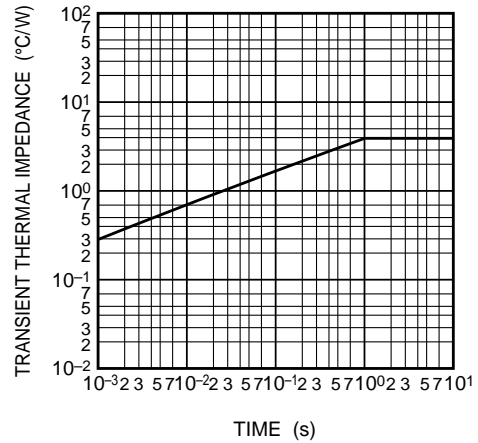
GATE TRIGGER CURRENT VS. JUNCTION TEMPERATURE



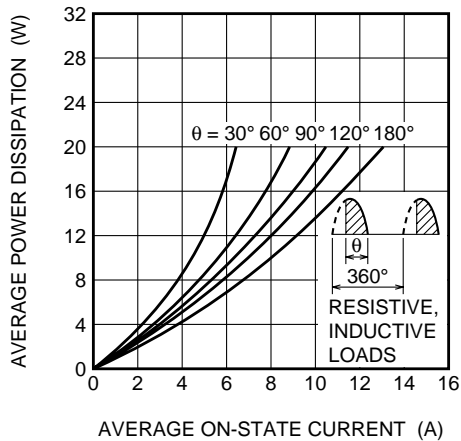
GATE TRIGGER VOLTAGE VS. JUNCTION TEMPERATURE



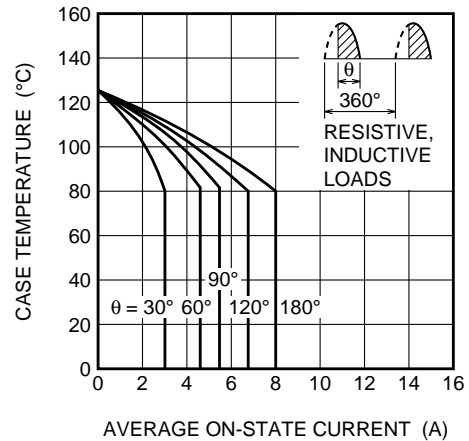
MAXIMUM TRANSIENT THERMAL IMPEDANCE CHARACTERISTICS (JUNCTION TO CASE)



MAXIMUM AVERAGE POWER DISSIPATION (SINGLE-PHASE HALF WAVE)



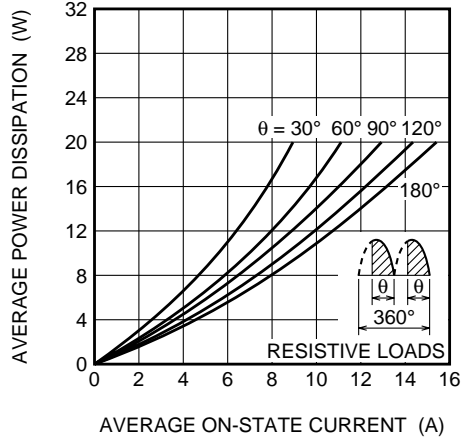
ALLOWABLE CASE TEMPERATURE VS. AVERAGE ON-STATE CURRENT (SINGLE-PHASE HALF WAVE)



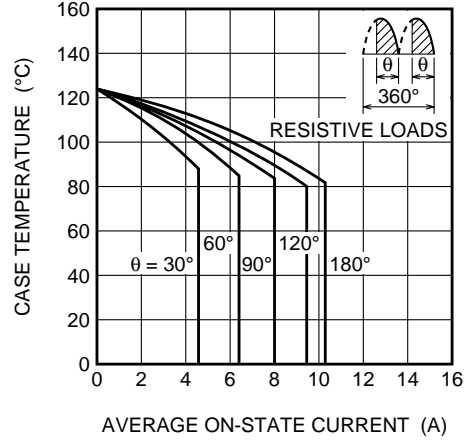
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MEDIUM POWER USE
INSULATED TYPE, GLASS PASSIVATION TYPE

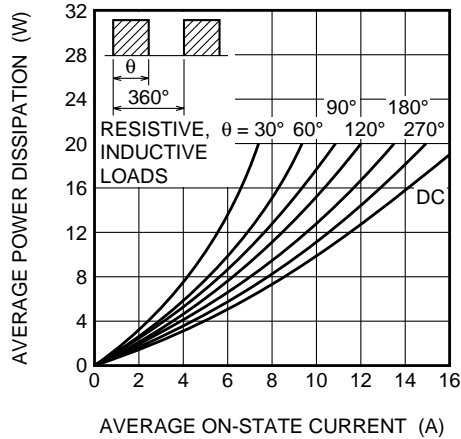
MAXIMUM AVERAGE POWER DISSIPATION
(SINGLE-PHASE FULL WAVE)



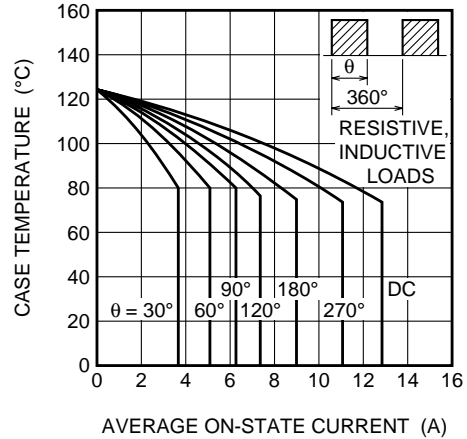
ALLOWABLE CASE TEMPERATURE VS.
AVERAGE ON-STATE CURRENT
(SINGLE-PHASE FULL WAVE)



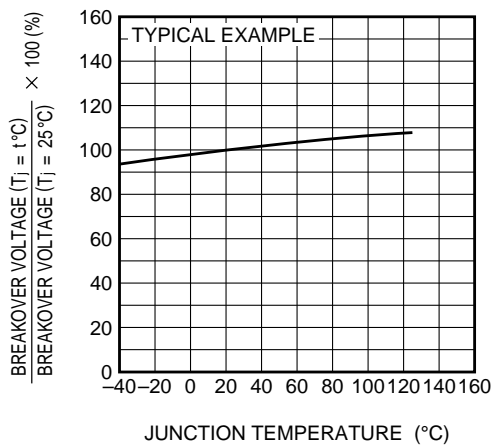
MAXIMUM AVERAGE POWER DISSIPATION
(RECTANGULAR WAVE)



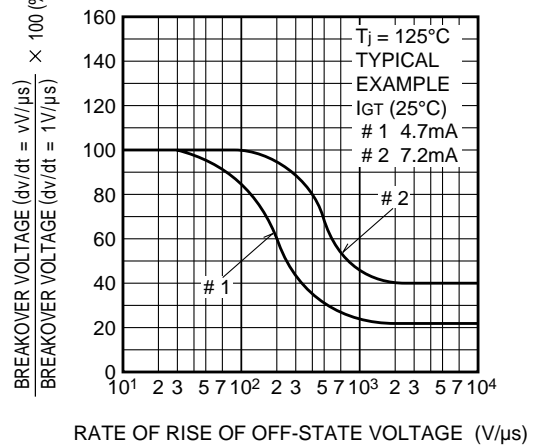
ALLOWABLE CASE TEMPERATURE VS.
AVERAGE ON-STATE CURRENT
(RECTANGULAR WAVE)



BREAKOVER VOLTAGE VS.
JUNCTION TEMPERATURE



BREAKOVER VOLTAGE VS.
RATE OF RISE OF OFF-STATE VOLTAGE



CR8PM

MEDIUM POWER USE
INSULATED TYPE, GLASS PASSIVATION TYPE

