

SM16G45, SM16J45, SM16G45A, SM16J45A

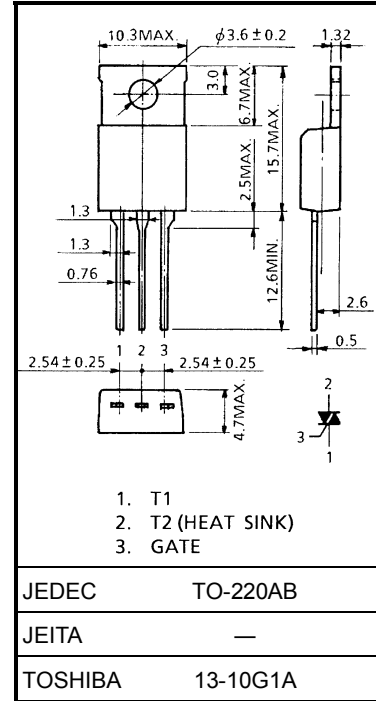
AC POWER CONTROL APPLICATIONS

- Repetitive Peak Off-State Voltage : $V_{DRM} = 400V, 600V$
- R.M.S On-State Current : $I_T (RMS) = 16A$
- High Commutating (dv / dt)

MAXIMUM RATINGS

| CHARACTERISTIC | SYMBOL | RATING | UNIT |
|---------------------------------------------------------------------|---------------------------------------------------------|------------|------------|
| Repetitive Peak Off-State Voltage | V_{DRM} SM16G45 SM16G45A SM16J45 SM16J45A | 400 | V |
| | | 600 | |
| R.M.S On-State Current (Full Sine Waveform $T_c = 100^\circ C$) | $I_T (RMS)$ | 16 | A |
| Peak One Cycle Surge On-State Current (Non-Repetitive) | I_{TSM} | 150 (50Hz) | A |
| | | 165 (60Hz) | |
| I^2_t Limit Value | I^2_t | 112.5 | A^2s |
| Peak Gate Power Dissipation | P_{GM} | 5 | W |
| Average Gate Power Dissipation | $P_G (AV)$ | 0.5 | W |
| Peak Gate Voltage | V_{GM} | 10 | V |
| Peak Gate Current | I_{GM} | 2 | A |
| Junction Temperature | T_j | -40~125 | $^\circ C$ |
| Storage Temperature Range | T_{stg} | -40~125 | $^\circ C$ |

Unit: mm

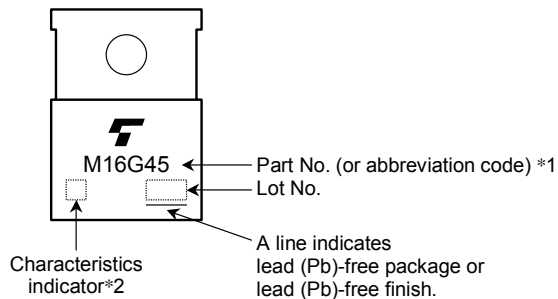


Weight: 2.0 g (typ.)

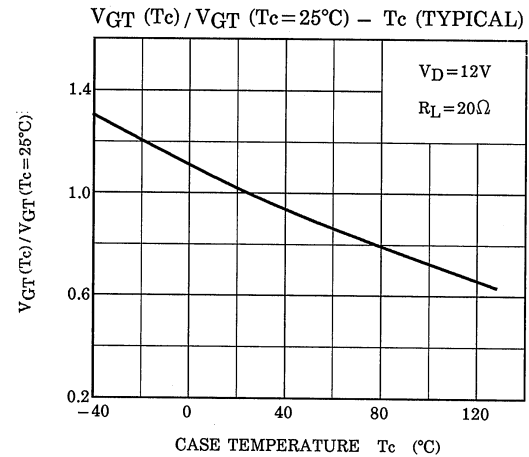
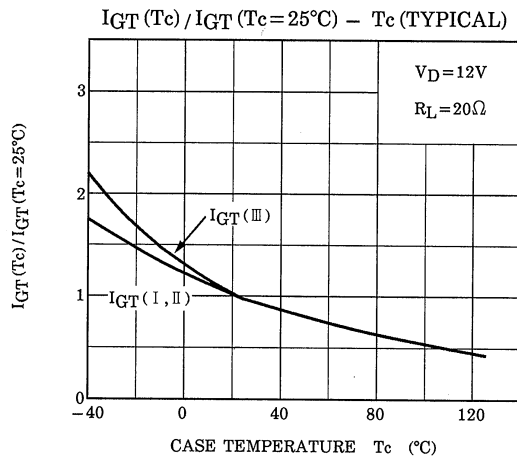
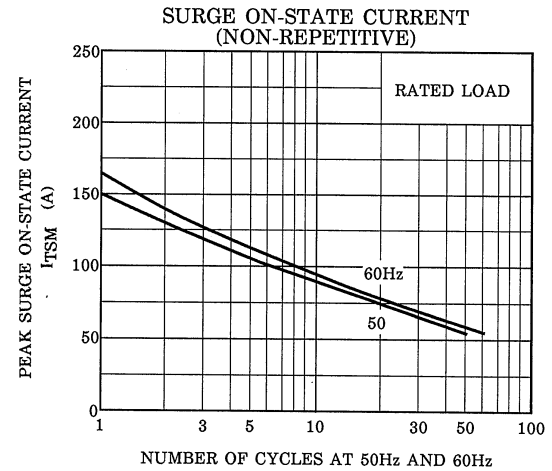
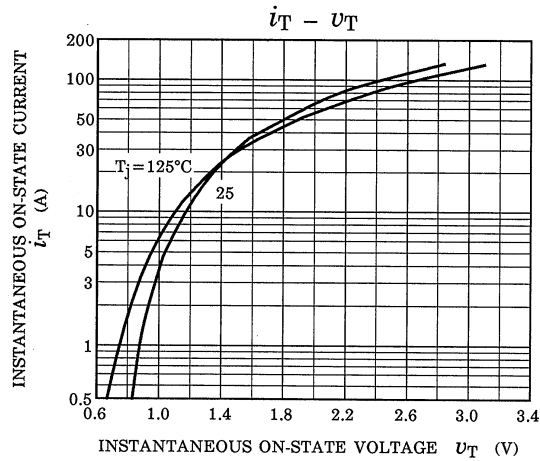
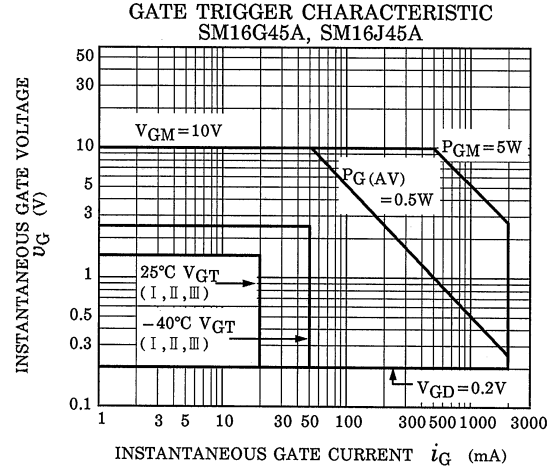
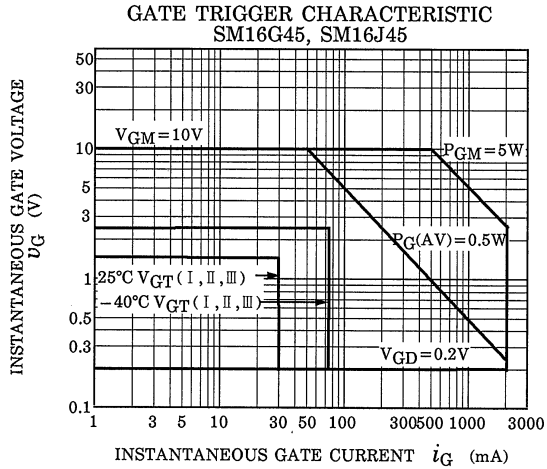
ELECTRICAL CHARACTERISTICS (Ta = 25°C)

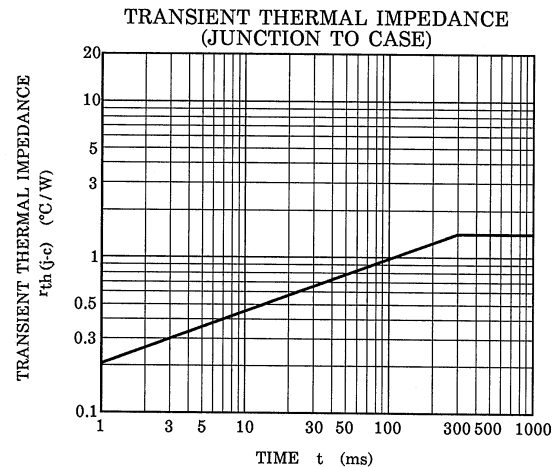
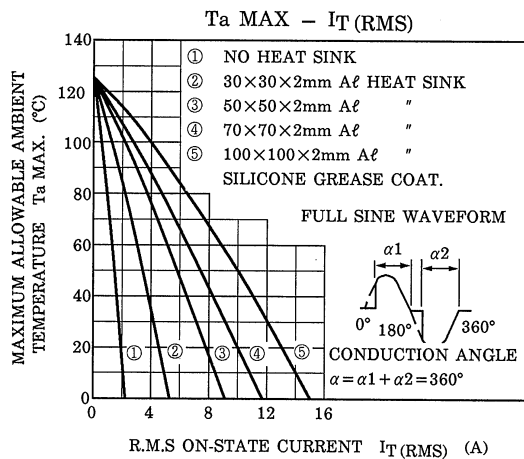
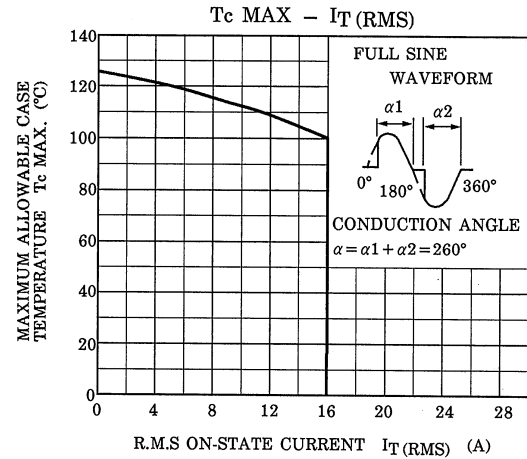
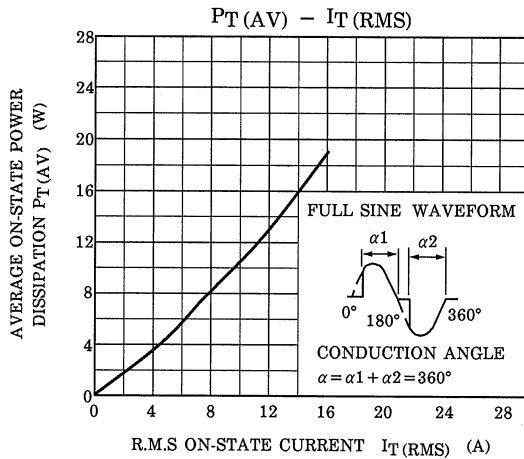
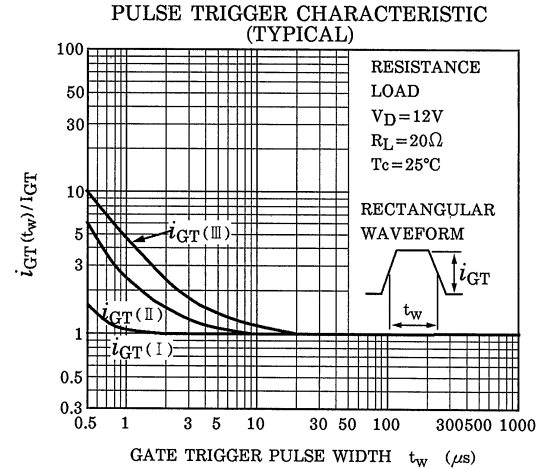
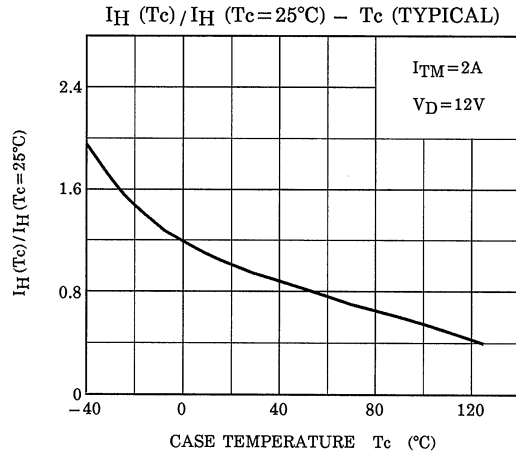
| CHARACTERISTIC | | SYMBOL | TEST CONDITION | | MIN | TYP. | MAX | UNIT |
|-----------------------------------------------------------|----------------------|-----------------------|-------------------------------------------------------------------------------|-------------------|-----|------|-----|--------|
| Repetitive Peak Off-State Current | | I _{DRM} | V _{DRM} = Rated | | — | — | 20 | μA |
| Gate Trigger Voltage | I | V _{GT} | V _D = 12V, R _L = 20Ω | T2 (+) , Gate (+) | — | — | 1.5 | V |
| | II | | | T2 (+) , Gate (–) | — | — | 1.5 | |
| | III | | | T2 (–) , Gate (–) | — | — | 1.5 | |
| | IV | | | T2 (–) , Gate (–) | — | — | — | |
| Gate Trigger Current | SM16G45 SM16J45 | I _{GT} | V _D = 12V, R _L = 20Ω | T2 (+) , Gate (+) | — | — | 30 | mA |
| | | | | T2 (+) , Gate (–) | — | — | 30 | |
| | | | | T2 (–) , Gate (–) | — | — | 30 | |
| | | | | T2 (–) , Gate (+) | — | — | — | |
| | SM16G45A SM16J45A | | | T2 (+) , Gate (+) | — | — | 20 | |
| | | | | T2 (+) , Gate (–) | — | — | 20 | |
| | | | | T2 (–) , Gate (–) | — | — | 20 | |
| | | | | T2 (–) , Gate (+) | — | — | — | |
| Peak On-State Voltage | | V _{TM} | I _{TM} = 25A | | — | — | 1.5 | V |
| Gate Non-Trigger Voltage | | V _{GD} | V _D = Rated, T _c = 125°C | | 0.2 | — | — | V |
| Holding Current | | I _H | V _D = 12V, I _{TM} = 2A | | — | — | 50 | mA |
| Critical Rate of Rise of Off-State Voltage at Commutation | SM16G45 SM16J45 | (dv / dt) c | V _D = 400V, (di / dt) c = – 8.7A / ms T _j = 125°C | | 10 | — | — | V / μs |
| | SM16G45A SM16J45A | | | | 4 | — | — | |
| Thermal Resistance | | R _{th (j-c)} | Junction to Case, AC | | — | — | 1.4 | °C / W |

MARKING



| | Part No. (or abbreviation code) | Part No. |
|----|------------------------------------|--------------------|
| *1 | M16G45 | SM16G45, SM16G45A |
| | M16J45 | SM16J45, SM16J45A |
| *2 | Nothing | SM16G45, SM16J45 |
| | M16J45A | SM16G45A, SM16J45A |





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