

40A Standard SCRs

Product Summary

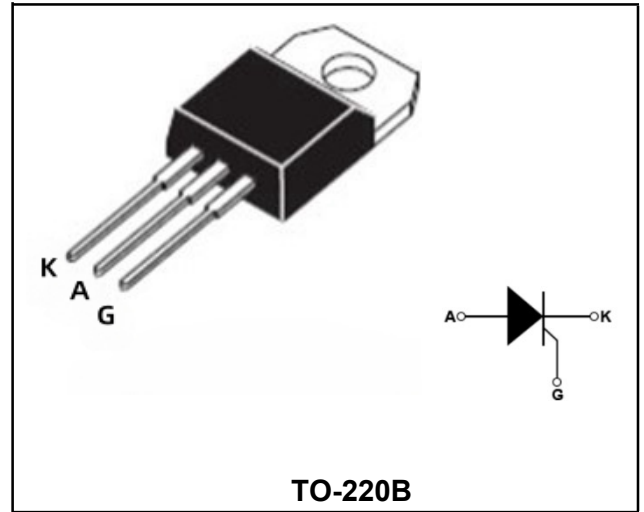
| Symbol | Value | Unit |
|-------------------|---------------|------|
| $I_{T(RMS)}$ | 40 | A |
| $V_{DRM} V_{RRM}$ | 800/1000/1200 | V |
| V_{TM} | 1.6 | V |

Features

With high ability to withstand the shock loading of large current, Provide high dv/dt rate with strong resistance to electromagnetic interference.

Application

Power charger, T-tools, massager, solid state relay, AC Motor speed regulation and so on.



Absolute maximum ratings (Ta=25°C unless otherwise noted)

| Parameter | Symbol | Value | Unit |
|---|--------------|---------------|------------------|
| Repetitive peak off-state voltage | V_{DRM} | 800/1000/1200 | V |
| Repetitive peak reverse voltage | V_{RRM} | 800/1000/1200 | V |
| RMS on-state current | $I_{T(RMS)}$ | 40 | A |
| Non repetitive surge peak on-state current (full cycle, F=50Hz) | I_{TSM} | 460 | A |
| I^2t value for fusing (tp=10ms) | I^2t | 1060 | A ² s |
| Critical rate of rise of on-state current ($I_G = 2 \times I_{GT}$) | di_T/dt | 100 | A/ μ s |
| Peak gate current | I_{GM} | 4 | A |
| Average gate power dissipation | $P_G (AV)$ | 1 | W |
| Junction Temperature | T_J | -40~+125 | °C |
| Storage Temperature | T_{STG} | -40 ~+150 | °C |

Electrical characteristics (TA=25°C, unless otherwise noted)

| Parameter | Symbol | Test Condition | Value | | Unit |
|--|-----------|---|-------|-----|-----------------------------|
| | | | Min | Max | |
| Gate trigger current | I_{GT} | $V_D=12V, R_L=33\Omega, T_j=25^\circ C$ | 5 | 35 | mA |
| Gate trigger voltage | V_{GT} | | - | 1.3 | V |
| Gate non-trigger voltage | V_{GD} | $V_D=V_{DRM}, R_L=3.3k\Omega, T_j=125^\circ C$ | 0.2 | - | V |
| latching current | I_L | $I_G = 1.2I_{GT}$ | - | 150 | mA |
| Holding current | I_H | $I_T=500mA$ | - | 75 | mA |
| Critical-rate of rise of commutation voltage | dV_D/dt | $V_D=67\%V_{DRM}, \text{ Gate Open } T_j=125^\circ C$ | 500 | - | V/μs |

STATIC CHARACTERISTICS

| | | | | | |
|-----------------------------------|-----------|---|-------------------|-----|---------------------------|
| Forward "on" voltage | V_{TM} | $I_T=80A, t_p=380\mu s, T_j=25^\circ C$ | - | 1.6 | V |
| Repetitive Peak Off-State Current | I_{DRM} | $V_D=V_{DRM} V_R=V_{RRM}$ | $T_j=25^\circ C$ | | μA |
| Repetitive Peak Reverse Current | I_{RRM} | | $T_j=125^\circ C$ | | mA |

THERMAL RESISTANCES

| | | | | | |
|--------------------|---------------|---------------------|------|-----|--------------------------------|
| Thermal resistance | $R_{th(j-c)}$ | Junction to case | TYP. | 0.8 | $^\circ C/W$ |
| | $R_{th(j-a)}$ | Junction to ambient | TYP. | 60 | $^\circ C/W$ |

Ordering Information

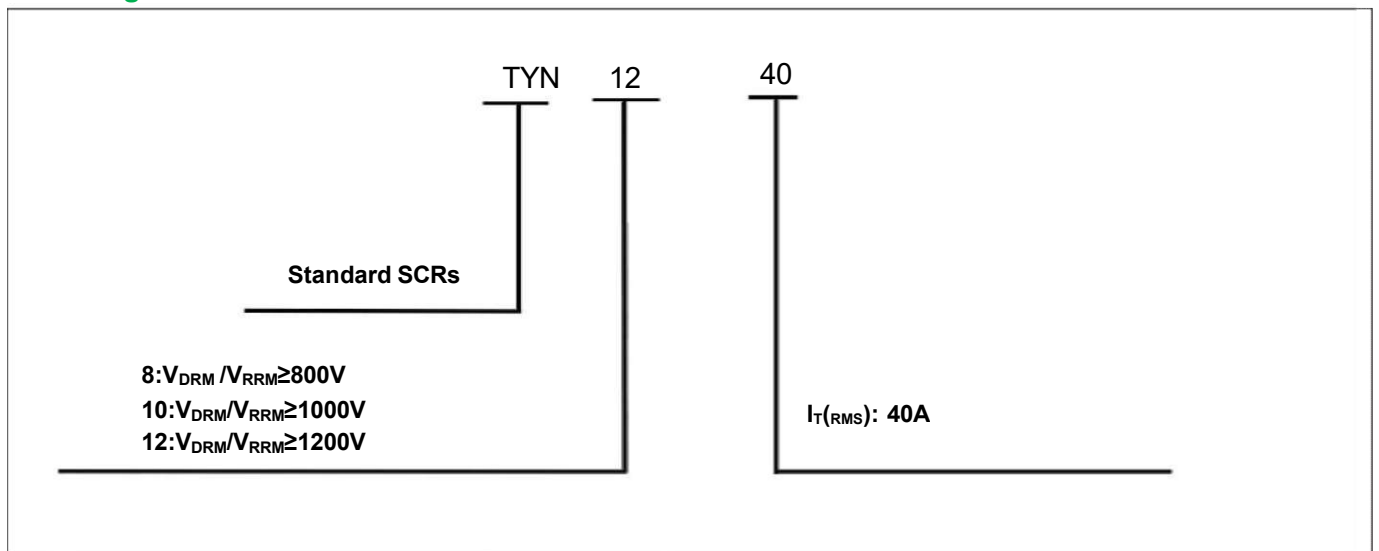


FIG.1: Maximum power dissipation versus RMS on-state current (full cycle)

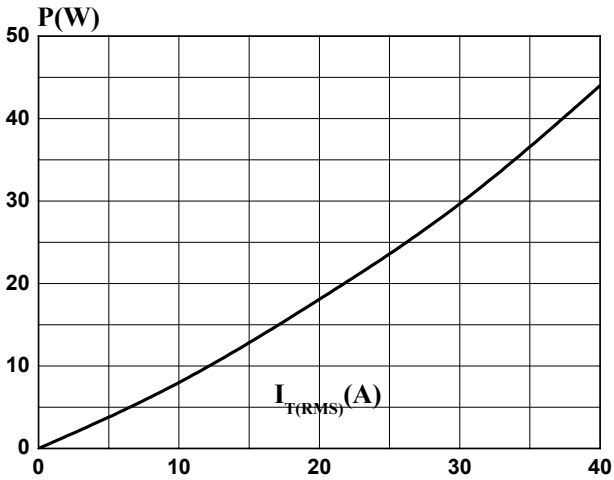


FIG.2: RMS on-state current versus case temperature (full cycle)

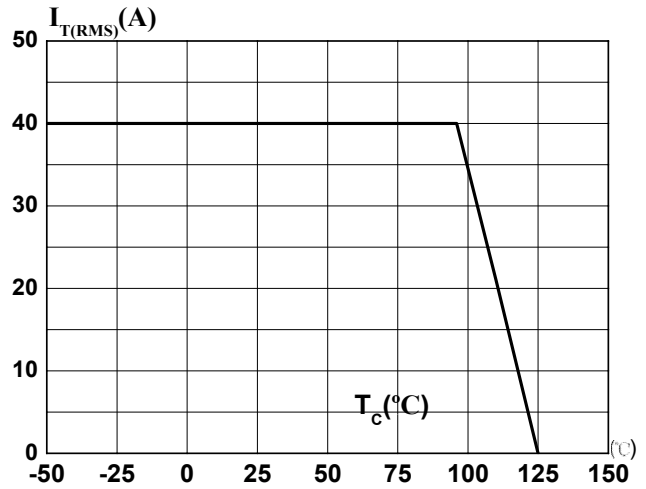


FIG.3: Surge peak on-state current versus number of cycles

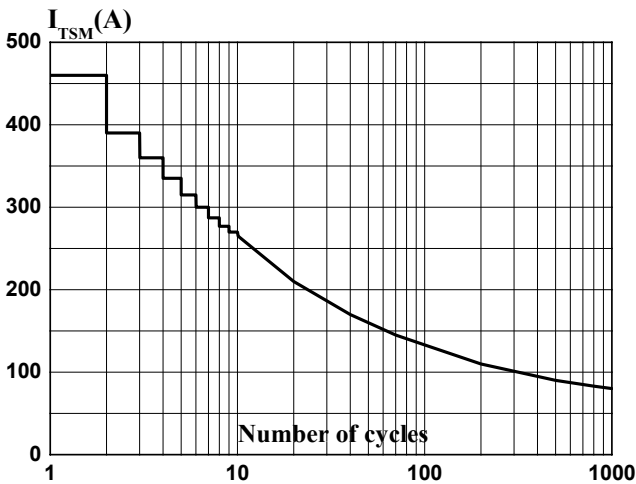


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10\text{ms}$

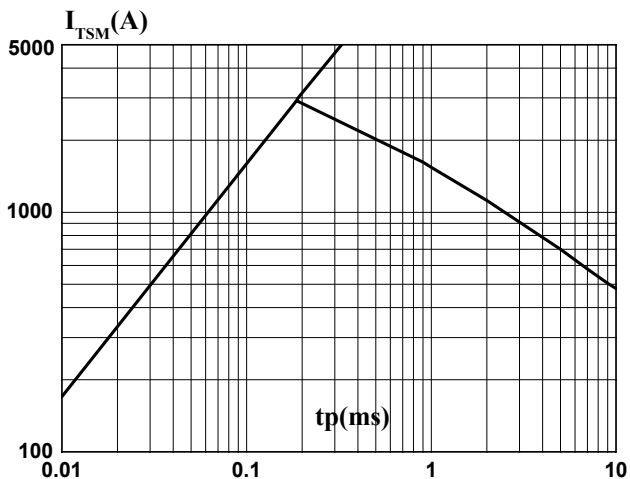


FIG.4: On-state characteristics (maximum values)

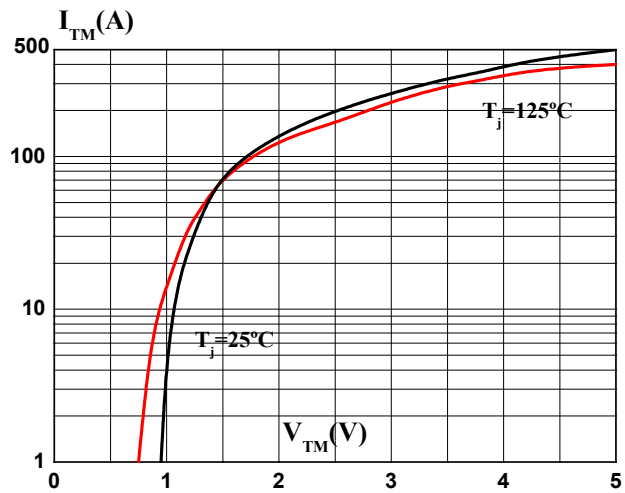
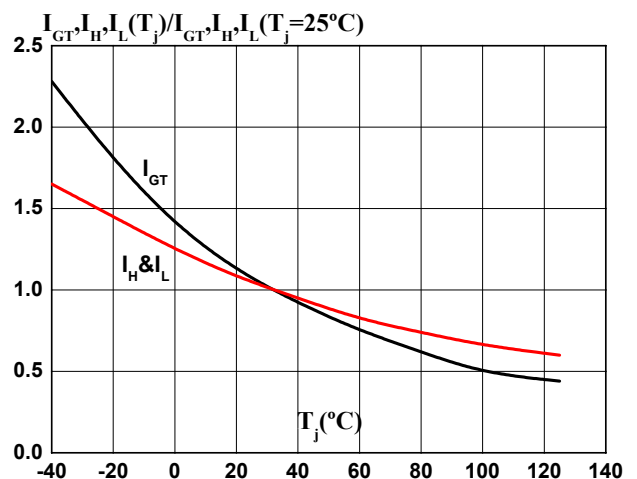
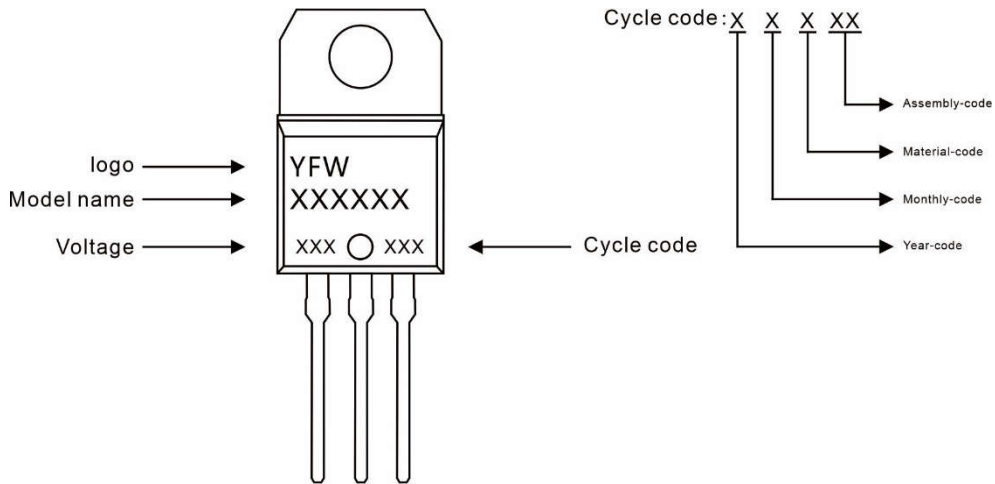


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature (typical values)



Marking Diagram



Ordering information

| Model name | Package | Unit Weight | Base Quantity | Packing Quantity |
|------------|---------|---------------|---------------|----------------------------|
| TYNXXXX | TO-220B | 0.07oz(1.96g) | 50pcs/tube | 1000PCS/Box 5000PCS/Carton |

Package Dimensions

TO-220B(Non Insulated)

| Symbol | Millimeter | | Inches | |
|--------|------------|-------|--------|-------|
| | Min. | Max. | Min. | Max. |
| A | 9.80 | 10.40 | 0.386 | 0.409 |
| B | 2.65 | 3.10 | 0.104 | 0.122 |
| C | 14.80 | 16.10 | 0.583 | 0.634 |
| D | 0.70 | 0.92 | 0.028 | 0.036 |
| D1 | 1.18 | 1.42 | 0.047 | 0.056 |
| E | 2.40 | 2.70 | 0.095 | 0.106 |
| L | 2.80 | 4.20 | 0.11 | 0.17 |
| L1 | 13.05 | 13.60 | 0.514 | 0.535 |
| H | 5.85 | 6.82 | 0.23 | 0.27 |
| K | 2.35 | 2.75 | 0.093 | 0.108 |
| T | 4.38 | 4.61 | 0.172 | 0.181 |
| T1 | 1.15 | 1.36 | 0.045 | 0.054 |
| T2 | 0.35 | 0.65 | 0.014 | 0.026 |
| ΦR | 3.75 | 3.95 | 0.148 | 0.156 |

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