

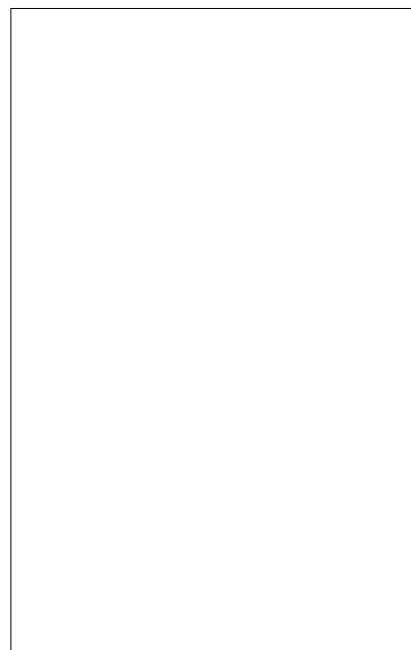


JCT840EH 40A SCR

Rev.A.1.1

DESCRIPTION:

With high ability to withstand the shock loading of large current, JCT840EH SCR provides high dV/dt rate with strong resistance to electromagnetic interference. It is especially recommended for use on solid state relay, motorcycle, power charger, T-tools etc. Package TO-263 is RoHS compliant.



MAIN FEATURES

| Symbol | Value | Unit |
|-------------------|-------|------|
| $I_{T(RMS)}$ | 40 | A |
| V_{DRM}/V_{RRM} | 800 | V |
| I_{GT} | 35 | mA |

ABSOLUTE MAXIMUM RATINGS

| Parameter | Symbol | Value | Unit |
|--|------------------|---------|-----------------|
| Storage junction temperature range | T_{stg} | -40-150 | |
| Operating junction temperature range | T_j | -40-150 | |
| Repetitive peak off-state voltage ($T_j=25^\circ C$) | V_{DRM} | 800 | V |
| Repetitive peak reverse voltage ($T_j=25^\circ C$) | V_{RRM} | 800 | V |
| Average on-state current ($T_c = 129^\circ C$) | $I_{T(AV)90-40}$ | | C229 |

| | | | |
|--|----------|-----|----|
| Peak gate power | P_{GM} | 20 | W |
| Peak pulse voltage ($T_j=25$; non-repetitive, off-state; FIG.8) | V_{pp} | 0.5 | kV |

ELECTRICAL CHARACTERISTICS ($T_j=25$ unless otherwise specified)

| Symbol | Test Condition | Value | | | Unit |
|-----------|---|-------|------|------|------------|
| | | MIN. | TYP. | MAX. | |
| I_{GT} | $V_D=12V R_L=33$ | - | - | 35 | mA |
| V_{GT} | | - | - | 1 | V |
| V_{GD} | $V_D=V_{DRM} T_j=150 R_L=3.3k$ | 0.2 | - | - | V |
| I_L | $I_G=1.2I_{GT}$ | - | - | 80 | mA |
| I_H | $I_T=500mA$ | - | - | 70 | mA |
| dV/dt | $V_D=540V$ Gate Open $T_j=125$ | 1 00 | - | - | V/ μs |
| | $V_D=540V$ Gate Open $T_j=150$ | 500 | - | - | |
| t_{on} | $I_G=40mA I_A=400mA I_R=40mA$ $T_j=25$ | - | 2 | - | μs |
| t_{off} | | - | 60 | - | |

STATIC CHARACTERISTICS

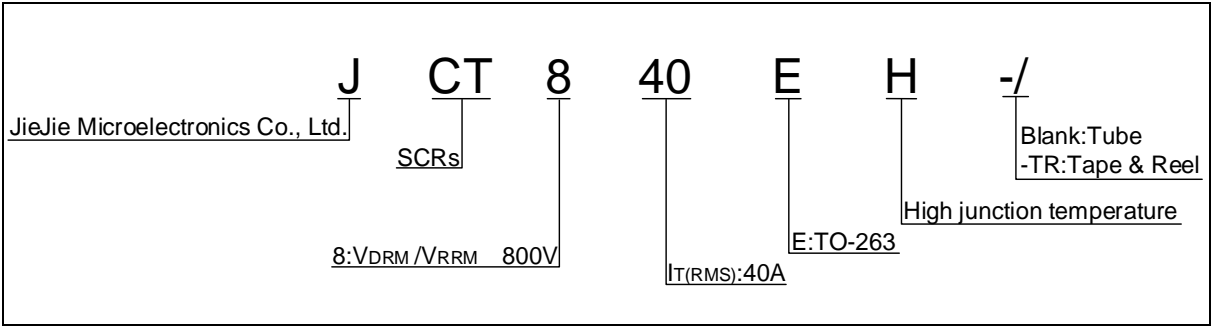
| Symbol | Parameter | | Value(MAX.) | Unit |
|-----------|---------------------------|-----------|-------------|---------|
| V_{TM} | $I_{TM}=80A t_p=380\mu s$ | $T_j=25$ | 1.55 | V |
| V_{TO} | Threshold voltage | $T_j=150$ | 0.65 | V |
| R_D | Dynamic resistance | $T_j=150$ | 17 | m |
| I_{DRM} | $V_D=V_{DRM} V_R=V_{RRM}$ | $T_j=25$ | 5 | μA |
| I_{RRM} | | $T_j=150$ | 10 | mA |

THERMAL RESISTANCES

| Symbol | Parameter | Value | Unit |
|---------------|-----------------------|-------|-------------|
| $R_{th(j-c)}$ | junction to case (DC) | 0.4 | /W |

$R_{th(j-a)}$ junction to ambient (D e abi)

ORDERING INFORMATION



MARKING

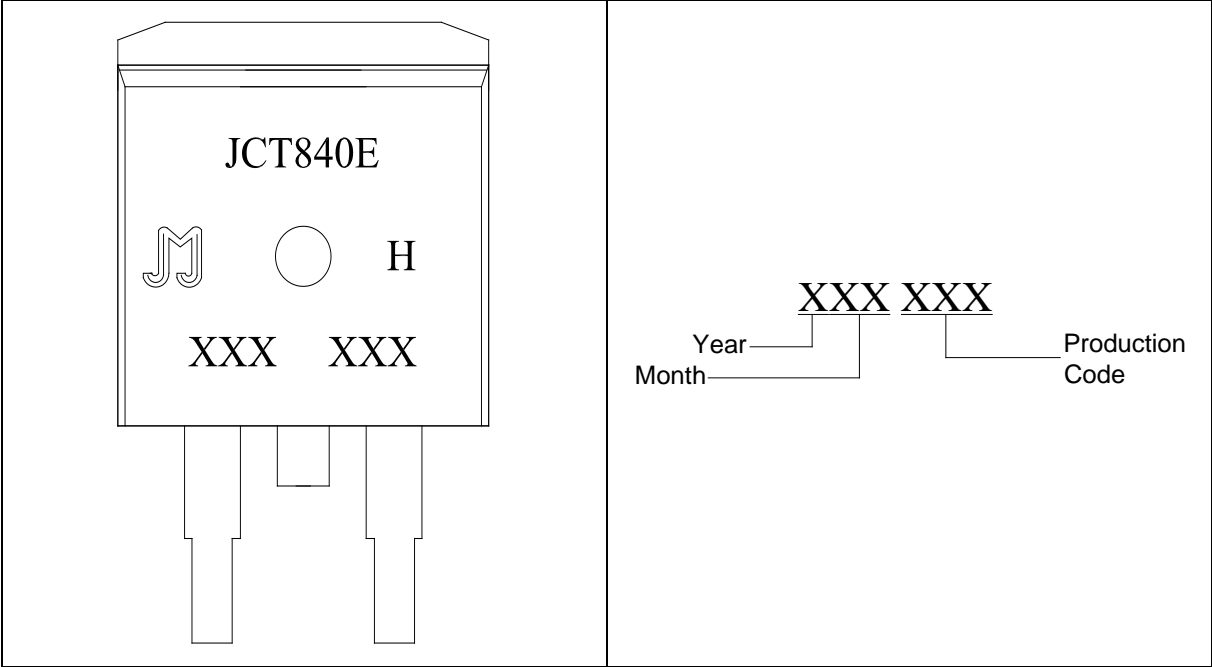


FIG.1: Maximum power dissipation versus RMS on-state current

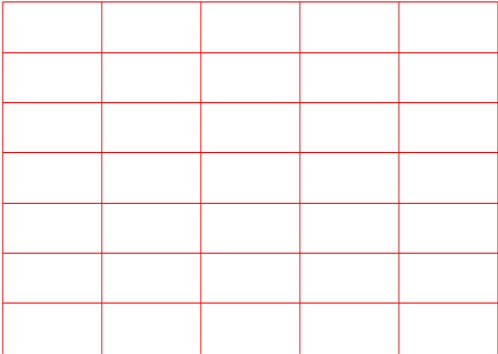


FIG.2: RMS on-state current versus case temperature

FIG.7: Relative variations of gate trigger current, holding current and latching current versus junction temperature

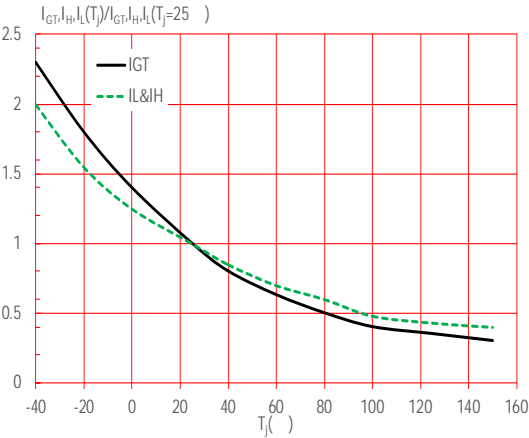


FIG.8 Test circuit for inductive and resistive loads to IEC-61000-4-5 standards. 61000-4-62 (00



PACKAGE MECHANICAL DATA

| Ref. | Dimensions | | | | | |
|------|-------------|------|------|--------|------|------|
| | Millimeters | | | Inches | | |
| | Min. | Typ. | Max. | Min. | Typ. | Max. |
| A | | | | | | |
| B | | | | | | |
| C | | | | | | |

Information in MC aThgdoc004 u>BDC enMC aT gbelev/BBMC aTo be ac004 c004 ure and r w (