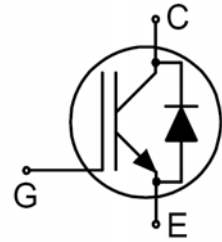


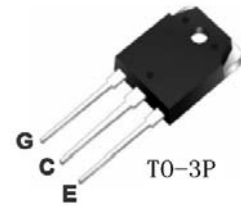
用途/Applications

- ◆ 逆变器/General purpose inverter
- ◆ 变频器/Frequency converters
- ◆ 电磁炉/Induction Heating (IH)
- ◆ 不间断电源/Uninterrupted Power Supply (UPS)



特点/Features

- ◆ 低栅极电荷/Low gate charge
- ◆ 正温度系数/Positive temperature coefficient
- ◆ 低饱和压降/Low saturation voltage
- ◆ RoHS 产品/RoHS product

极限参数/Absolute maximum ratings ($T_c=25^\circ\text{C}$, unless otherwise specified)

| Symbol | Parameter | Rating | Units |
|----------------|--|---------------|------------------|
| V_{CES} | Collector-emitter voltage | 1200 | V |
| V_{GES} | Gate-emitter voltage | ± 20 | V |
| I_C | Collector current | 40 | A |
| | Collector current@ $T_c=100^\circ\text{C}$ | 20 | A |
| I_{CM} | Collector peak current, T_P limited by T_{JMAX} | 60 | A |
| I_F | Diode forward current@ $T_c=100^\circ\text{C}$ | 20 | A |
| I_{FM} | Diode maximum forward current | 60 | A |
| P_D | Power dissipation($T_c=25^\circ\text{C}$) | 240 | W |
| | Power dissipation($T_c=100^\circ\text{C}$) | 96 | W |
| T_J, T_{stg} | Operating junction and storage temperature range | $-55\sim 150$ | $^\circ\text{C}$ |
| T_L | Maximum temperature for soldering | 300 | $^\circ\text{C}$ |

热特性/Thermal characteristics

| Symbol | Parameter | Rating | | | Units |
|---------------|---|--------|------|------|---------------------------|
| | | Min. | Typ. | Max. | |
| $R_{th(j-c)}$ | IGBT thermal resistance, junction-case | - | - | 0.52 | $^\circ\text{C}/\text{W}$ |
| $R_{th(j-e)}$ | Diode thermal resistance, junction-case | - | - | 2.4 | $^\circ\text{C}/\text{W}$ |
| $R_{th(j-a)}$ | Thermal resistance, junction-ambient | - | - | 40 | $^\circ\text{C}/\text{W}$ |

电性能参数/Electrical characteristics (Tc=25°C, unless otherwise specified)

| Symbol | Parameter | Test condition | Rating | | | Units |
|---------------|--------------------------------------|--|--------|------|-----------|---------|
| | | | Min. | Typ. | Max. | |
| V_{CES} | Collector-emitter breakdown voltage | $V_{GE}=0V; I_{CE}=250\mu A$ | 1200 | - | - | V |
| I_{CES} | Zero gate voltage Collector current | $V_{GE}=0V; V_{CE}=1200V$ | - | - | 1 | mA |
| I_{GES} | Gate-body leakage current | $V_{GE}=\pm 20V; V_{CE}=0V$ | - | - | ± 250 | nA |
| $V_{GE(th)}$ | Gate threshold voltage | $I_C=15mA; V_{CE}=V_{GE}$ | 3.5 | - | 7.5 | V |
| $V_{CE(sat)}$ | Collector-emitter saturation voltage | $I_C=20A; V_{GE}=15V$ | - | 2 | 2.5 | V |
| C_{ies} | Input capacitance | $V_{CE}=25V, V_{GE}=0V, f=1MHz$ | - | 3030 | - | pF |
| C_{oes} | Output capacitance | | - | 76 | - | |
| C_{res} | Reverse transfer capacitance | | - | 125 | - | |
| $t_{d(ON)}$ | Turn-on delay time | $V_{CC}=600V, I_C=20A, R_G=10\Omega, V_{GE}=15V, Inductive Load$ | - | 41 | - | ns |
| t_r | Rise time | | - | 38 | - | |
| $t_{d(OFF)}$ | Turn-off delay time | | - | 206 | - | |
| t_f | Fall time | | - | 341 | - | |
| E_{on} | Turn-On Switching Loss | | - | 1 | 2.1 | mJ |
| E_{off} | Turn-Off Switching Loss | | - | 1.2 | 1.5 | |
| E_{ts} | Total Switching Loss | | - | 2.1 | 3.6 | |
| Q_G | Total gate charge | $V_{CC}=600V, I_C=20A, V_{GE}=15V$ | - | 154 | 224 | nC |
| Q_{G-E} | Gate-emitter charge | | - | 16 | 25 | |
| Q_{G-C} | Gate-collector charge | | - | 56 | 80 | |
| V_F | Diode forward voltage | $I_F=20A$ | - | 1.3 | 2.7 | V |
| T_{rr} | Reverse recovery time | $I_F=20A, di/dt=200A/\mu S$ | - | 430 | 481 | ns |
| I_{rr} | Diode Peak Reverse Recovery Current | | - | 37 | 60 | A |
| Q_{rr} | Reverse recovery charge | | - | 0.9 | 1.1 | μC |

