FAIRCHILD SEMICONDUCTOR®

July 2008

# FGH40N60SFD
## 600V, 40A Field Stop IGBT

### Features

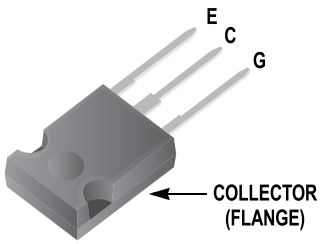
- High current capability
- Low saturation voltage: $V_{CE(sat)}$ =2.3V @ $I_C$ = 40A
- High input impedance
- Fast switching
- RoHS compliant

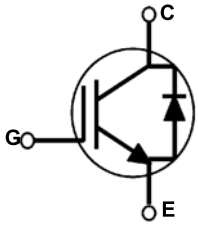
### Applications

- Induction Heating, UPS, SMPS, PFC

### General Description

Using Novel Field Stop IGBT Technology, Fairchild's new series of Field Stop IGBTs offer the optimum performance for Induction Heating, UPS, SMPS and PFC applications where low conduction and switching losses are essential.




### Absolute Maximum Ratings

| Symbol | Description | | Ratings | Units |
|---|---|---|---|---|
| $V_{CES}$ | Collector to Emitter Voltage | | 600 | V |
| $V_{GES}$ | Gate to Emitter Voltage | | ± 20 | V |
| $I_C$ | Collector Current | @ $T_C$ = 25°C | 80 | A |
| | Collector Current | @ $T_C$ = 100°C | 40 | A |
| $I_{CM\ (1)}$ | Pulsed Collector Current | @ $T_C$ = 25°C | 120 | A |
| $P_D$ | Maximum Power Dissipation | @ $T_C$ = 25°C | 290 | W |
| | Maximum Power Dissipation | @ $T_C$ = 100°C | 116 | W |
| $T_J$ | Operating Junction Temperature | | -55 to +150 | °C |
| $T_{stg}$ | Storage Temperature Range | | -55 to +150 | °C |
| $T_L$ | Maximum Lead Temp. for soldering Purposes, 1/8" from case for 5 seconds | | 300 | °C |

**Notes:**
1: Repetitive rating: Pulse width limited by max. junction temperature

### Thermal Characteristics

| Symbol | Parameter | Typ. | Max. | Units |
|---|---|---|---|---|
| $R_{\theta JC}$(IGBT) | Thermal Resistance, Junction to Case | - | 0.43 | °C/W |
| $R_{\theta JC}$(Diode) | Thermal Resistance, Junction to Case | - | 1.45 | °C/W |
| $R_{\theta JA}$ | Thermal Resistance, Junction to Ambient | - | 40 | °C/W |