

Field Stop Trench IGBT

650 V, 75 A, TO247

AFGHL75T65SQ

Using the novel field stop 4th generation IGBT technology, AFGHL75T65SQ offers the optimum performance with both low conduction and switching losses for high efficiency operations in various applications, which does not require reverse recovery specification.

- Maximum Junction Temperature: $T_J = 175^\circ\text{C}$
- Positive Temperature Co-efficient for Easy Parallel Operating
- High Current Capability
- Low Saturation Voltage: $V_{CE(Sat)} = 1.6\text{ V (Typ.) @ } I_C = 75\text{ A}$
- 100% of the Parts are Tested for I_{LM} (Note 2)
- Fast Switching
- Tight Parameter Distribution
- AEC-Q101 Qualified and PPAP Capable

- Automotive
- On & Off Board Chargers
- DC-DC Converters
- PFC
- Industrial Inverter

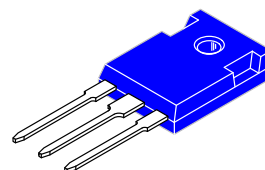
Collector-to-Emitter Voltage	V_{CES}	650	V
Gate-to-Emitter Voltage Transient Gate-to-Emitter Voltage	V_{GES}	± 20 ± 30	V
Collector Current (Note 1)	I_C	80 75	A
		@ $T_C = 25^\circ\text{C}$ @ $T_C = 100^\circ\text{C}$	
Pulsed Collector Current (Note 2)	I_{LM}	300	A
Pulsed Collector Current (Note 3)	I_{CM}	300	A
Maximum Power Dissipation	P_D	375 188	W
		@ $T_C = 25^\circ\text{C}$ @ $T_C = 100^\circ\text{C}$	
Operating Junction / Storage Temperature Range	T_J , T_{STG}	-55 to +175	$^\circ\text{C}$
Maximum Lead Temp. for Soldering Purposes, 1/8" from case for 10 seconds	T_L	265	$^\circ\text{C}$

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

1. Value limited by bond wire
2. $V_{CC} = 400\text{ V}$, $V_{GE} = 15\text{ V}$, $I_C = 300\text{ A}$, $R_G = 15\ \Omega$, Inductive Load, 100% of the Parts are Tested.
3. Repetitive Rating: pulse width limited by max. Junction temperature



AFGHL75T65SQ TO-247-3L 30 Units / Rail

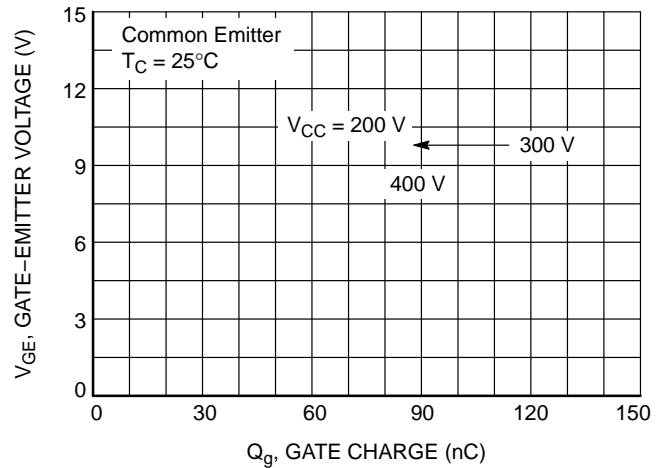
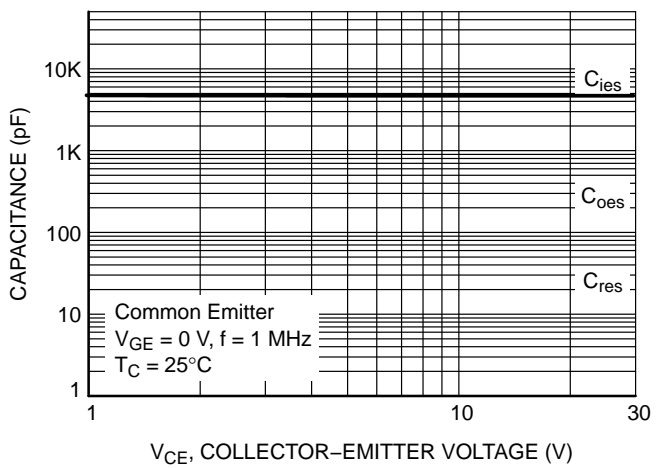
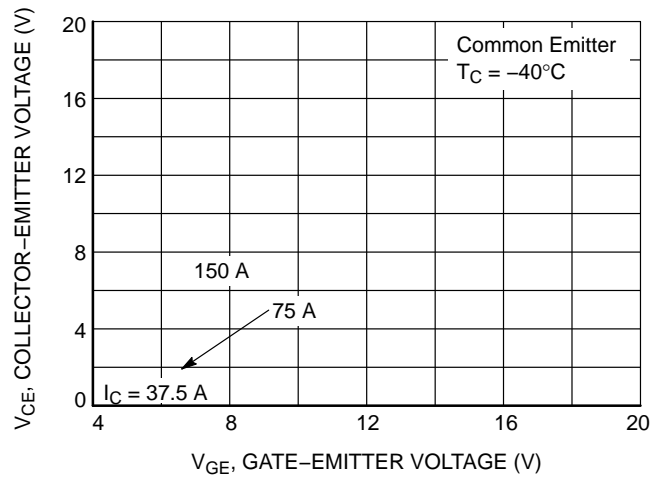
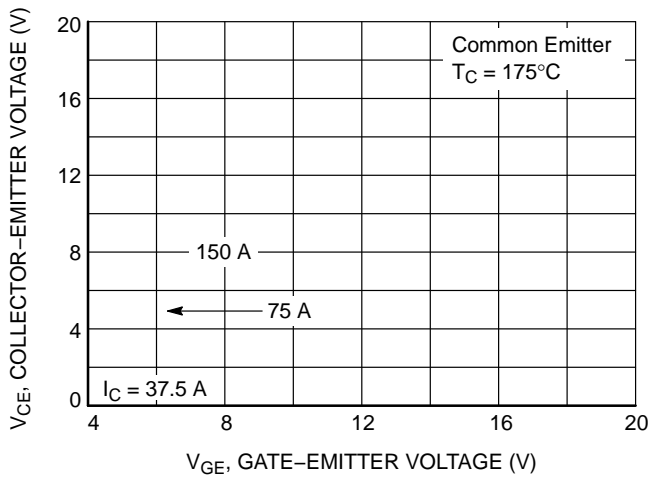
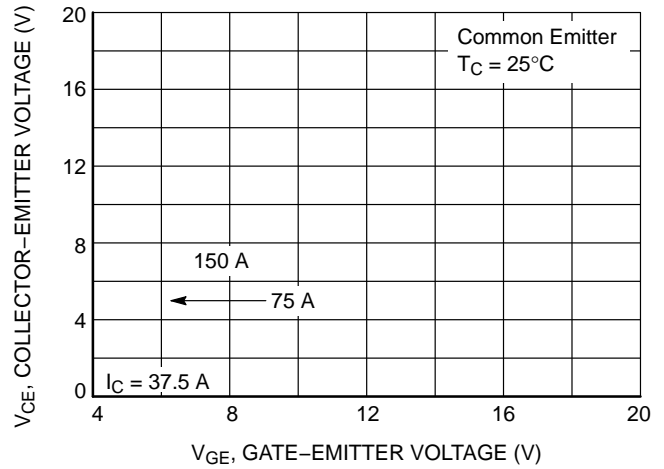
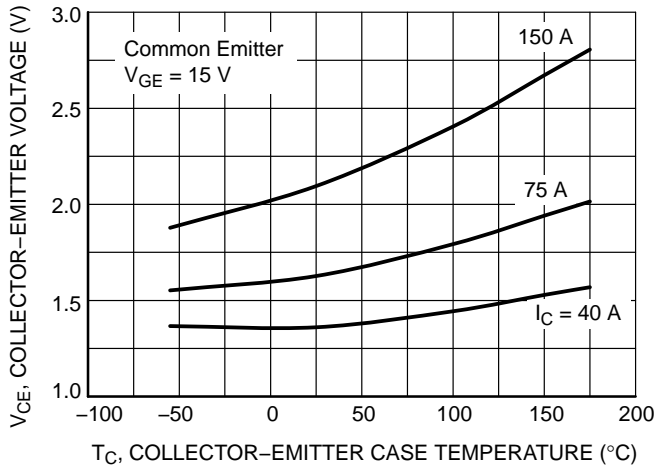


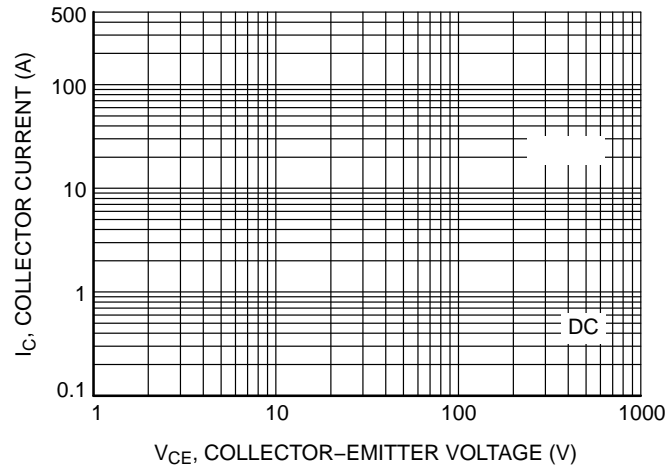
Thermal resistance junction-to-case, for IGBT	$R_{\theta JC}$	0.4	$^{\circ}\text{C}/\text{W}$
Thermal resistance junction-to-ambient	$R_{\theta JA}$	40	$^{\circ}\text{C}/\text{W}$

($T_J = 25^{\circ}\text{C}$ unless otherwise noted)

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Collector-emitter breakdown voltage, gate-emitter short-circuited	$V_{GE} = 0 \text{ V},$ $I_C = 1 \text{ mA}$	BV_{CES}	650	-	-	V
Temperature Coefficient of Breakdown Voltage	$V_{GE} = 0 \text{ V},$ $I_C = 1 \text{ mA}$	$\frac{\Delta BV_{CES}}{\Delta T_J}$	-	0.6	-	$\text{V}/^{\circ}\text{C}$
Collector-emitter cut-off current, gate-emitter short-circuited	$V_{GE} = 0 \text{ V},$ $V_{CE} = 650 \text{ V}$	I_{CES}	-	-	250	μA





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