

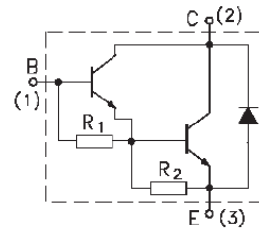
Features

- Monolithic Darlington configuration
- Integrated antiparallel collector-emitter diode

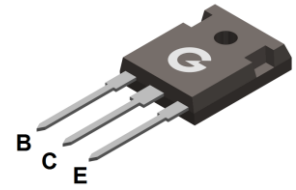
HF

Mechanical Data

- Case: TO-247
- Molding compound: UL flammability classification rating 94V-0
- Terminals: Tin-plated; solderability per MIL-STD-202, Method 208



R_1 Typ. = 9K Ω
 R_2 Typ. = 150 Ω



TO-247

Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
TIP142U	TO-247	30 pcs / Tube	TIP142U

Maximum Ratings (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Value	Unit
Collector-Base Breakdown Voltage	V_{CBO}	100	V
Collector-Emitter Breakdown Voltage	V_{CEO}	100	V
Emitter-Base Breakdown Voltage	V_{EBO}	5	V
Collector Current (Continuous)	I_C	10	A
Collector Current (Peak)	I_{CM}	20	A
Base Current (continuous)	I_B	0.5	A

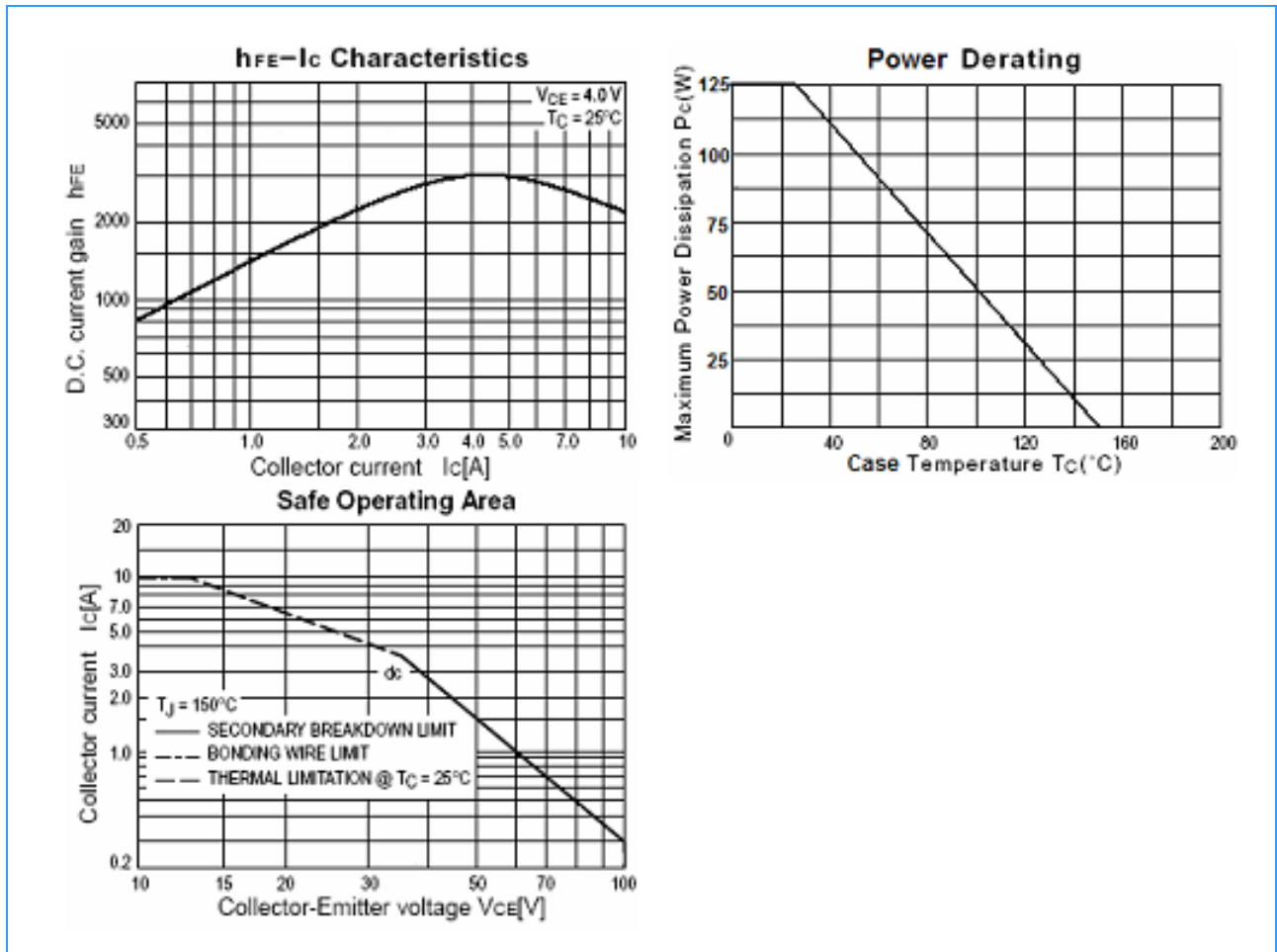
Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation ($T_C = 25^\circ\text{C}$)	P_D	125	W
Junction Temperature Range	T_J	-65 ~ +150	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-65 ~ +150	$^\circ\text{C}$

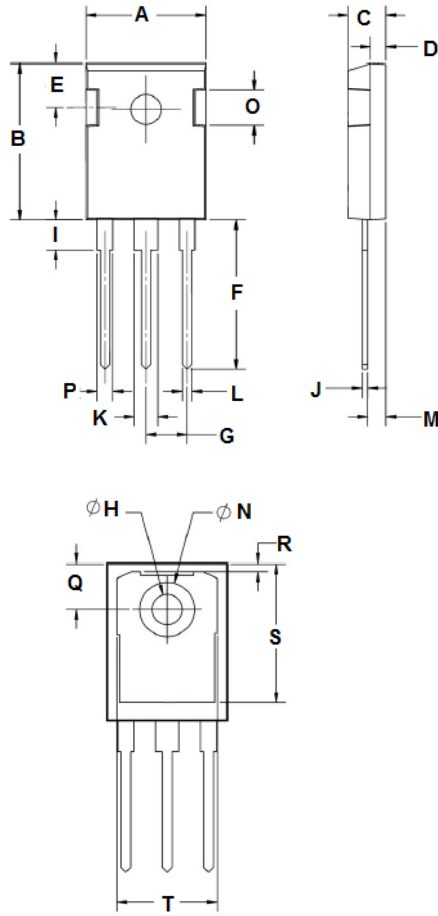
Electrical Characteristics (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 100\mu\text{A}, I_E = 0$	100	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 100\mu\text{A}, I_B = 0$	100	-	-	V
Collector-Emitter Sustaining Voltage	$V_{CE(sus)}$	$I_C = 30\text{mA}, I_B = 0$	100	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 1\text{mA}, I_C = 0$	5	-	-	V
Collector Cut-off Current	I_{CBO}	$V_{CB} = 100\text{V}, I_E = 0$	-	-	1	mA
Collector Cut-off Current	I_{CEO}	$V_{CE} = 50\text{V}, I_B = 0$	-	-	2	mA
Emitter Cut-off Current	I_{EBO}	$V_{EB} = 5\text{V}, I_C = 0$	-	-	2	mA
DC Current Gain	h_{FE}	$V_{CE} = 4\text{V}, I_C = 5\text{A}$	1000	-	-	-
Collector-emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 5\text{A}, I_B = 10\text{mA}$	-	-	2	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 10\text{A}, I_B = 40\text{mA}$	-	-	3.5	V
Base-Emitter on Voltage	$V_{BE(on)}$	$V_{CE} = 4\text{V}, I_C = 10\text{A}$	-	-	3	V

Ratings and Characteristics Curves (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)



Package Outline Dimensions (Unit: mm)



TO-247		
Dimension	Min.	Max.
A	15.50	16.10
B	20.70	21.30
C	4.70	5.30
D	1.80	2.20
E	5.20	5.80
F	19.70	20.30
G	5.20	5.60
H	3.30	3.70
I	3.90	4.30
J	0.50	0.70
K	2.80	3.20
L	1.00	1.40
M	2.20	2.60
N	7.00	7.20
O	4.90	5.30
P	1.80	2.20
Q	5.70	5.90
R	0.80	1.20
S	17.00	17.80
T	13.60	14.20

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