



# TIG056BF

## N-Channel IGBT

430V, 240A,  $V_{CE(sat)}$ ; 3.6V TO-220F-3FS

ON Semiconductor®

<http://onsemi.com>

### Features

- Low-saturation voltage
- Ultrahigh speed switching
- Enhancement type
- Protection diode in

### Specifications

Absolute Maximum Ratings at  $T_a=25^\circ\text{C}$

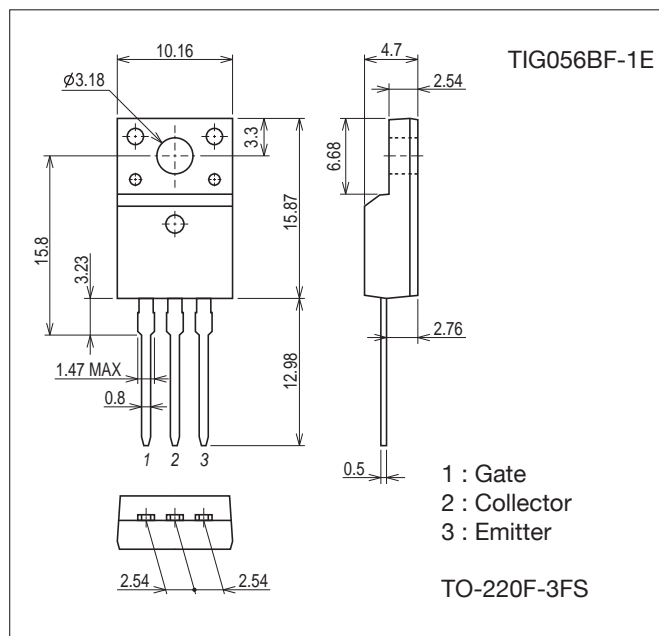
Parameter	Symbol	Conditions	Ratings	Unit
Collector to Emitter Voltage	$V_{CES}$		430	V
Gate to Emitter Voltage	$V_{GES}$		$\pm 33$	V
Collector Current (Pulse)	$I_{CP}$	$V_{GE}=15\text{V}$ , $C_M=2000\mu\text{F}$	240	A
Allowable Power Dissipation	$P_D$	$T_c=25^\circ\text{C}$	30	W
Channel Temperature	$T_{ch}$		150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$		-55 to +150	$^\circ\text{C}$

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

### Package Dimensions

unit : mm (typ)

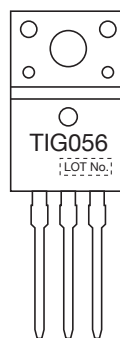
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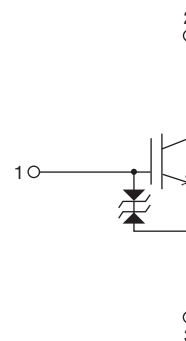
### Ordering & Package Information

Device	Package	Shipping	memo
TIG056BF-1E	TO-220F-3FS SC-67	50 pcs./magazine	Pb-Free

### Marking



### Electrical Connection

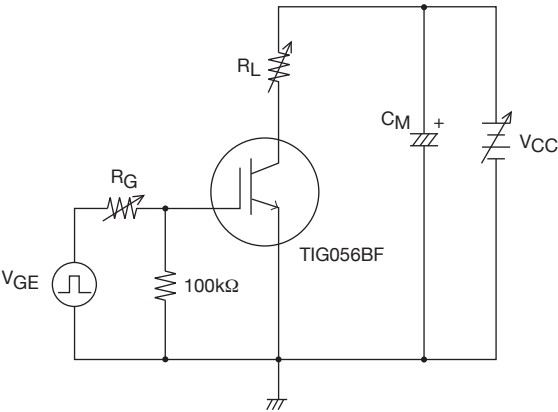


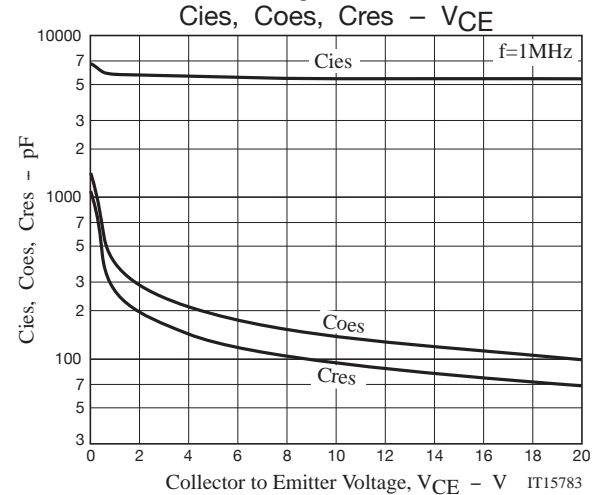
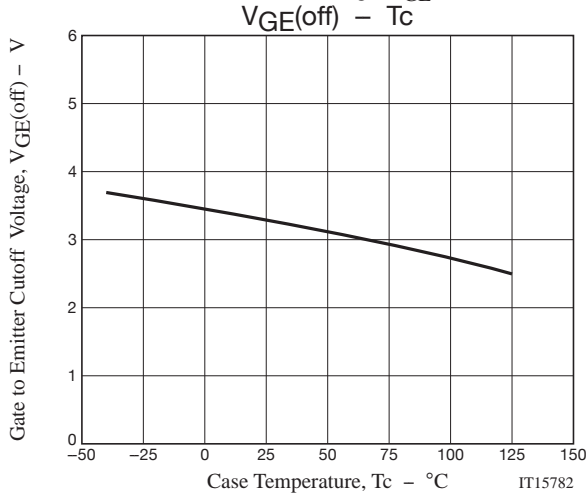
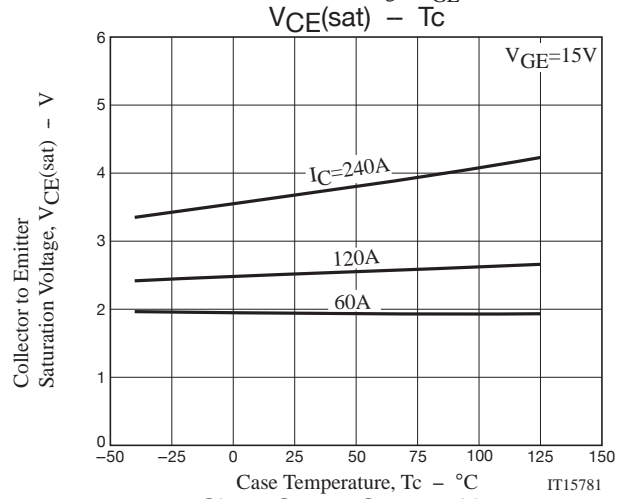
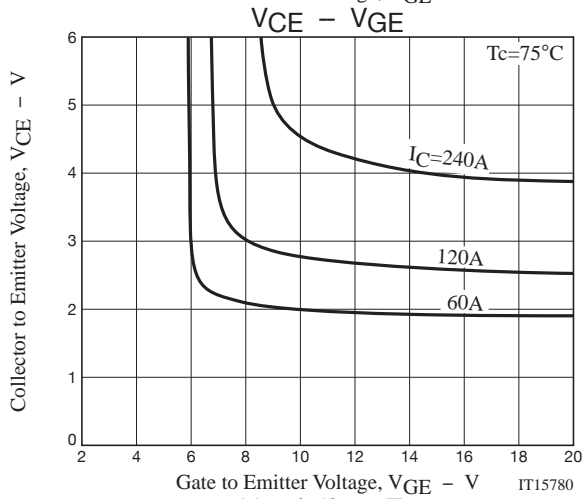
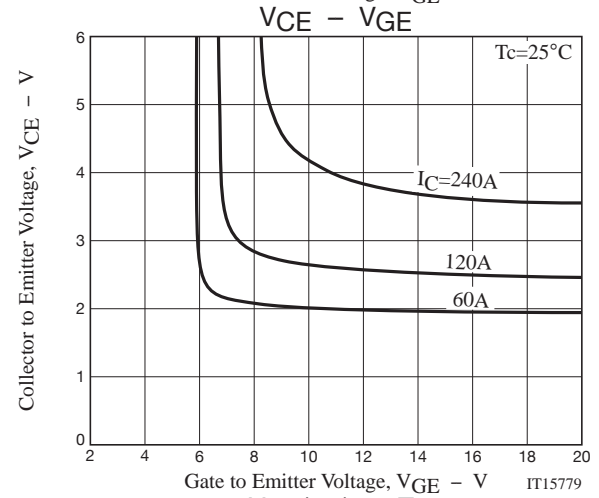
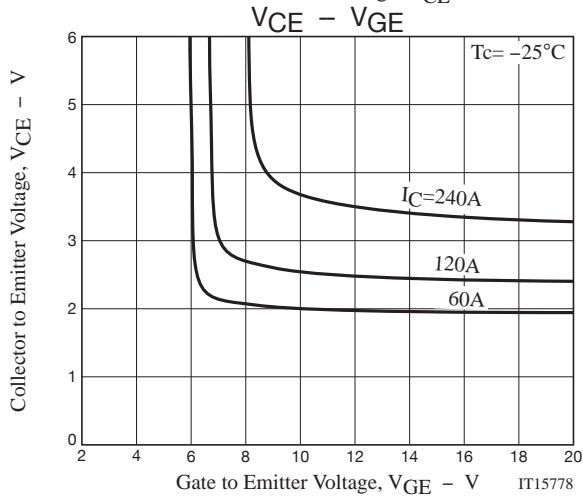
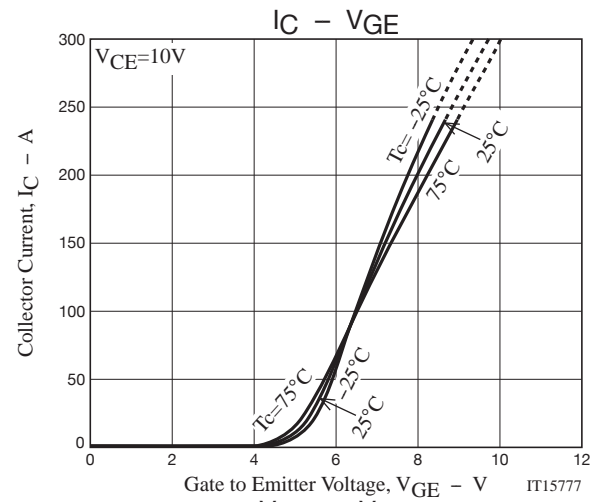
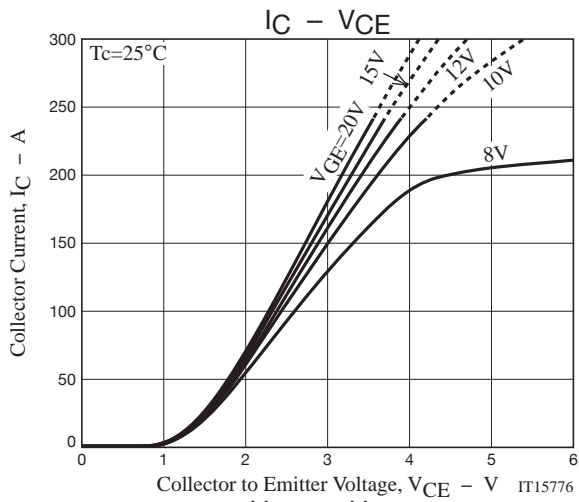
TIG056BF

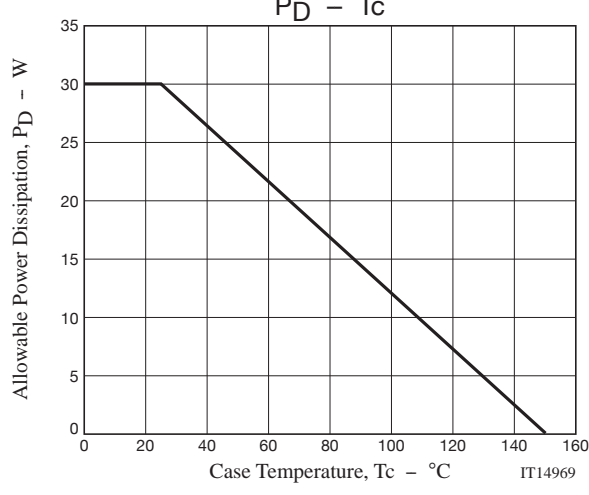
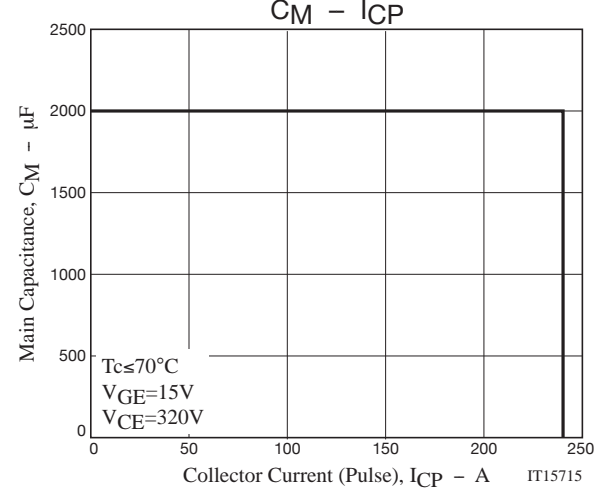
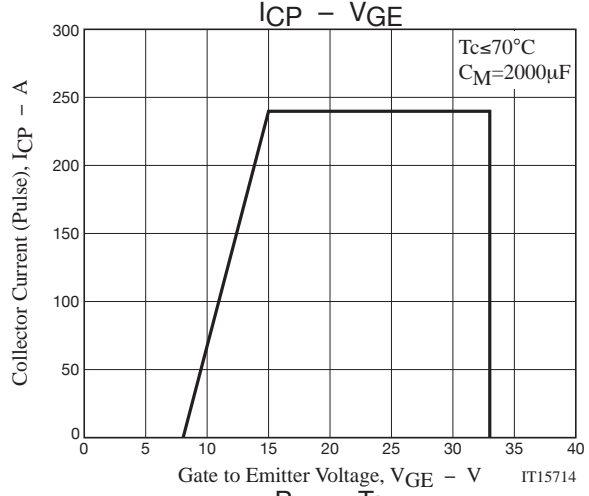
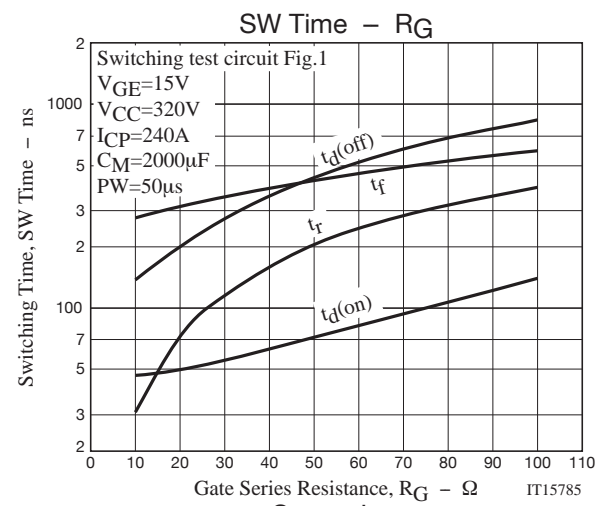
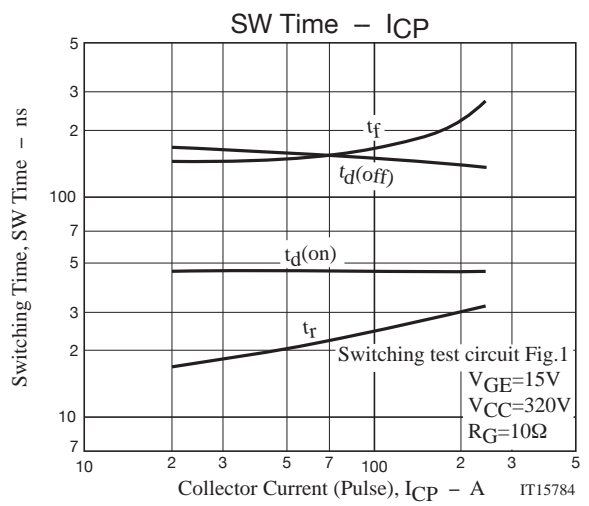
Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector to Emitter Breakdown Voltage	V(BR)CES	IC=2mA, VGE=0V	430			V
Collector to Emitter Cutoff Current	ICES	VCE=320V, VGE=0V			100	μA
Gate to Emitter Leakage Current	IGES	VGE=±30V, VCE=0V			±10	μA
Gate to Emitter Threshold Voltage	VGE(off)	VCE=10V, IC=1mA	2.5		5.0	V
Collector to Emitter Saturation Voltage	VCE(sat)	IC=240A, VGE=15V		3.6	5.0	V
Input Capacitance	Cies	VCE=20V, f=1MHz		5500		pF
Output Capacitance	Coes			100		pF
Reverse Transfer Capacitance	Cres			70		pF
Turn-ON Delay Time	td(on)	VCE=320V, IC=240A, VGE=15V, RG=10Ω		46		ns
Rise Time	tr			32		ns
Turn-OFF Delay Time	td(off)			140		ns
Fall Time	tf			270		ns

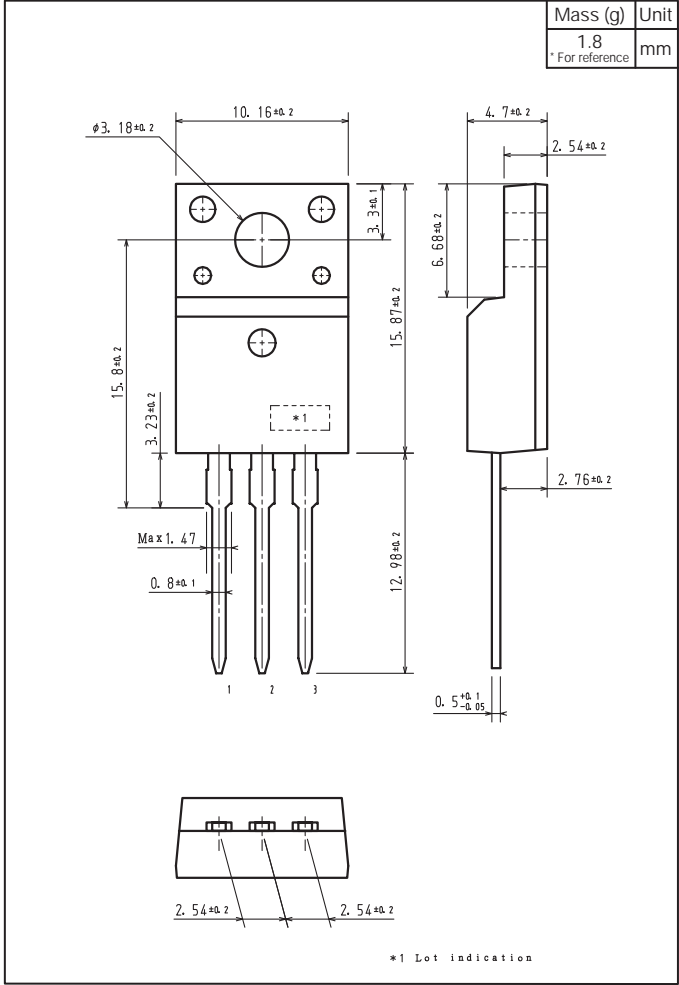
Fig1 Large Current R Load Switching Circuit







Outline Drawing  
TIG056BF-1E



Note on usage : TIG056BF has protection diode between gate and emitter but handling it requires sufficient care to be taken.

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