



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

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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 $T_a=25^\circ\text{C}$

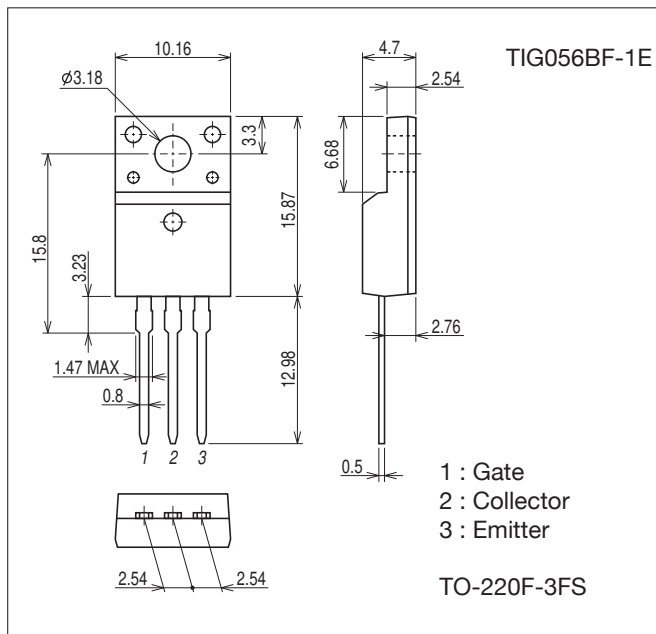
Parameter	Symbol	Conditions	Ratings	Unit
Collector to Emitter Voltage	V_{CES}		430	V
Gate to Emitter Voltage	V_{GES}		± 33	V
Collector Current (Pulse)	I_{CP}	$V_{GE}=15\text{V}, C_M=2000\mu\text{F}$	240	A
Allowable Power Dissipation	P_D	$T_c=25^\circ\text{C}$	30	W
Channel Temperature	T_{ch}		150	$^\circ\text{C}$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

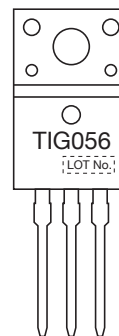
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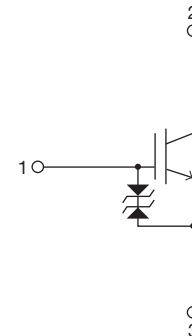
Ordering & Package Information

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

Marking



Electrical Connection

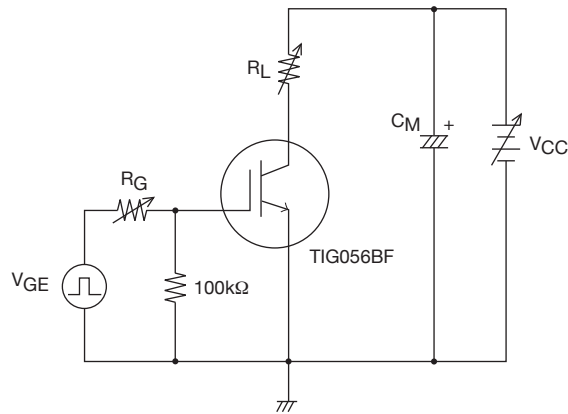


TIG056BF

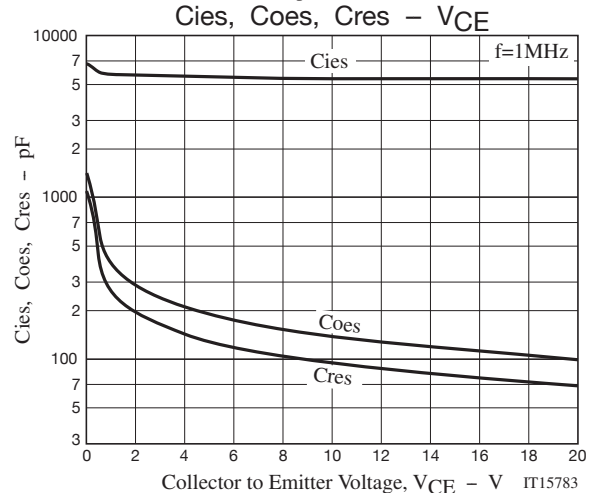
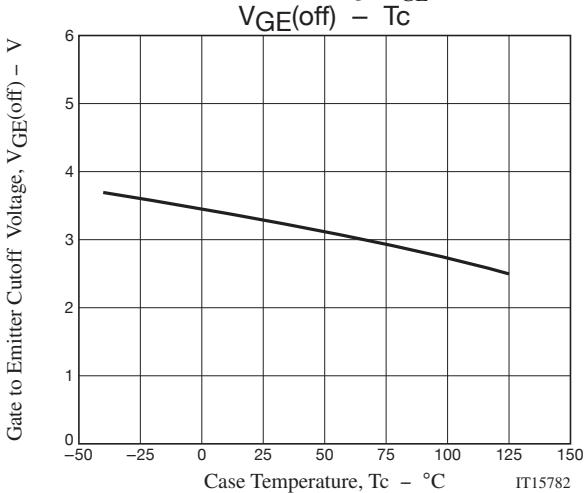
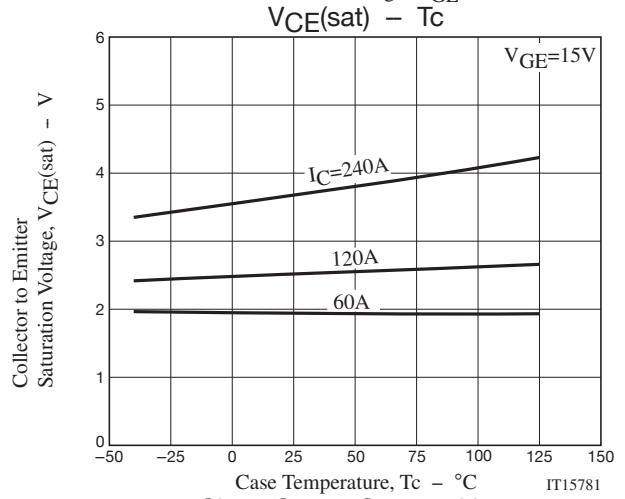
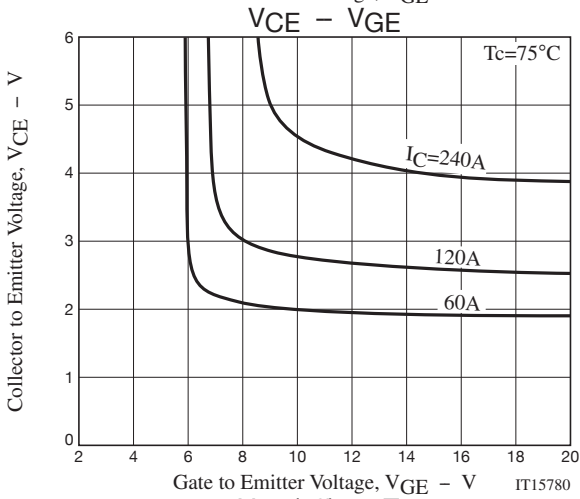
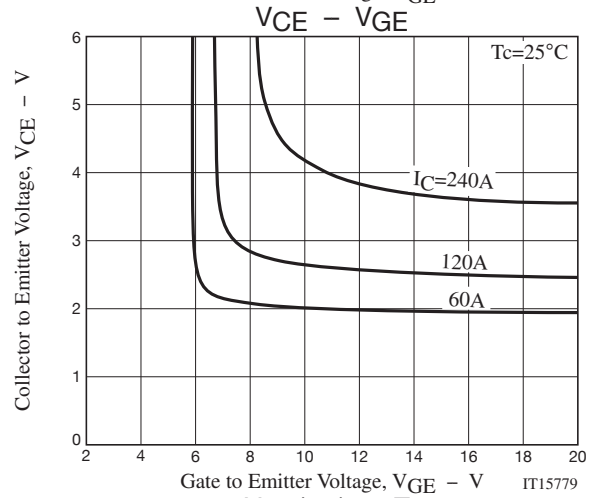
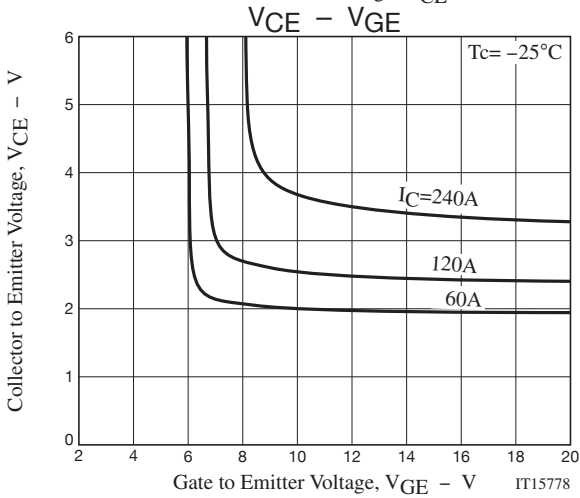
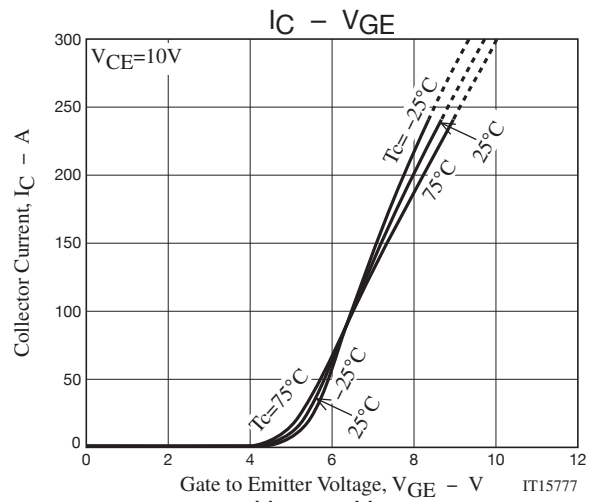
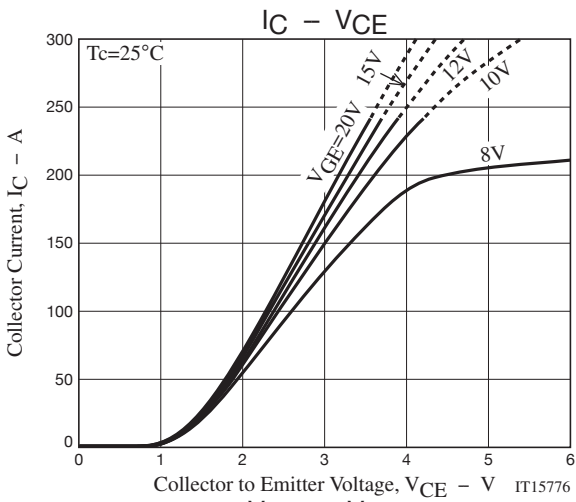
Electrical Characteristics at $T_a=25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings			Unit	
			min	typ	max		
Collector to Emitter Breakdown Voltage	$V_{(BR)CES}$	$I_C=2\text{mA}, V_{GE}=0\text{V}$	430			V	
Collector to Emitter Cutoff Current	I_{CES}	$V_{CE}=320\text{V}, V_{GE}=0\text{V}$			100	μA	
Gate to Emitter Leakage Current	I_{GES}	$V_{GE}=\pm 30\text{V}, V_{CE}=0\text{V}$			± 10	μA	
Gate to Emitter Threshold Voltage	$V_{GE(\text{off})}$	$V_{CE}=10\text{V}, I_C=1\text{mA}$	2.5		5.0	V	
Collector to Emitter Saturation Voltage	$V_{CE(\text{sat})}$	$I_C=240\text{A}, V_{GE}=15\text{V}$		3.6	5.0	V	
Input Capacitance	C_{ies}	$V_{CE}=20\text{V}, f=1\text{MHz}$		5500		pF	
Output Capacitance	C_{oes}				100		pF
Reverse Transfer Capacitance	C_{res}				70		pF
Turn-ON Delay Time	$t_{d(\text{on})}$				46		ns
Rise Time	t_r	$V_{CE}=320\text{V}, I_C=240\text{A}, V_{GE}=15\text{V}, R_G=10\Omega$			32		ns
Turn-OFF Delay Time	$t_{d(\text{off})}$				140		ns
Fall Time	t_f				270		ns

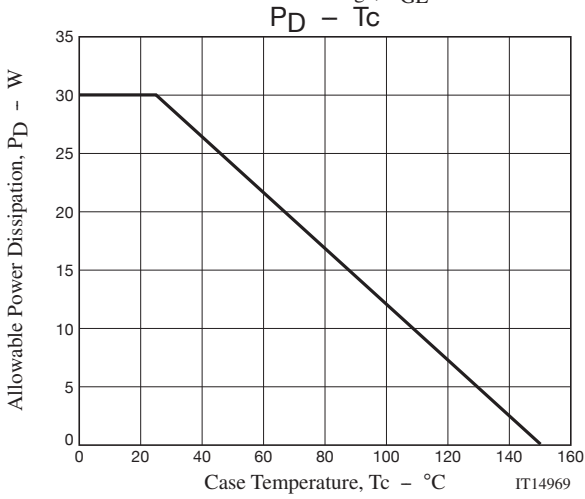
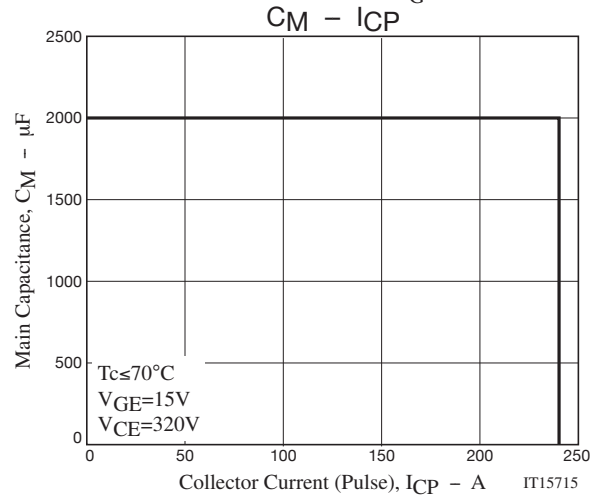
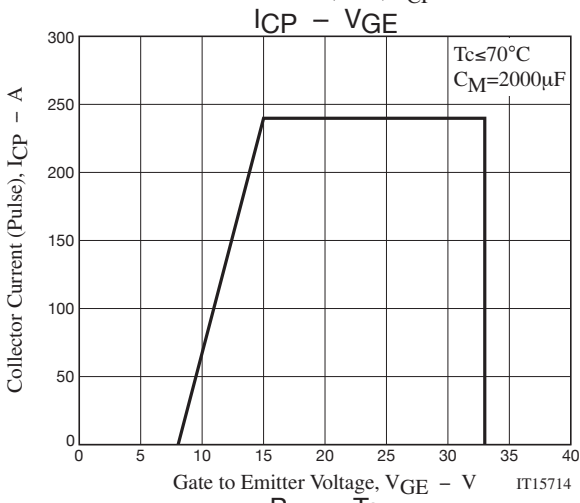
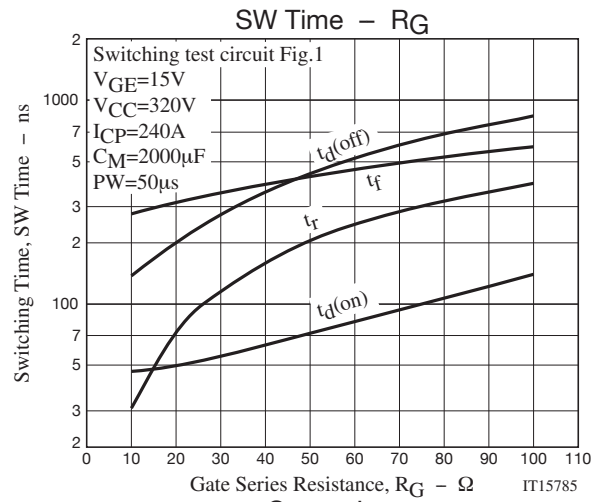
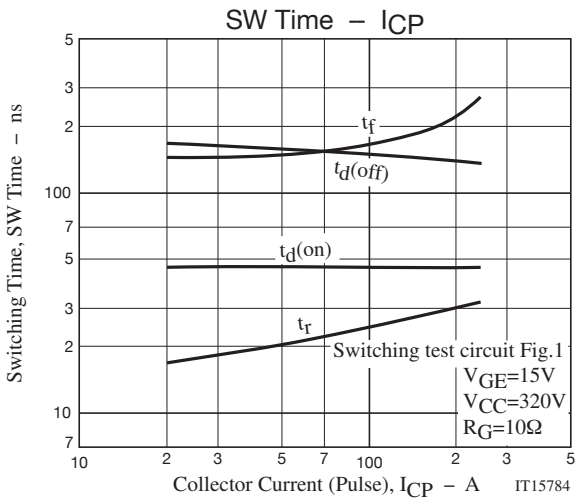
Fig1 Large Current R Load Switching Circuit



TIG056BF



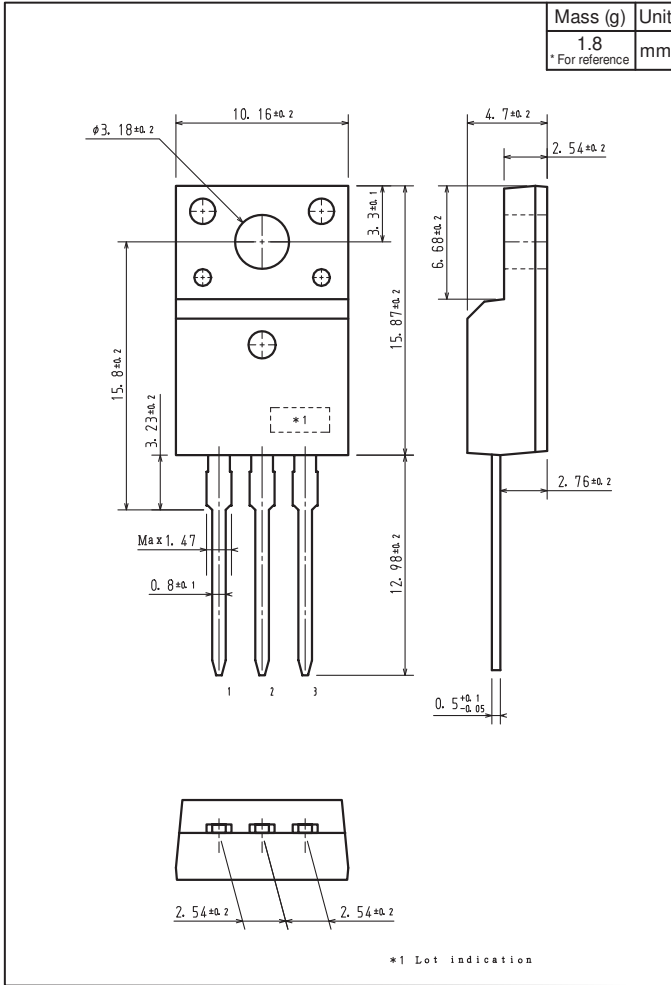
TIG056BF



TIG056BF

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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