



Over 150 million die shipped per year

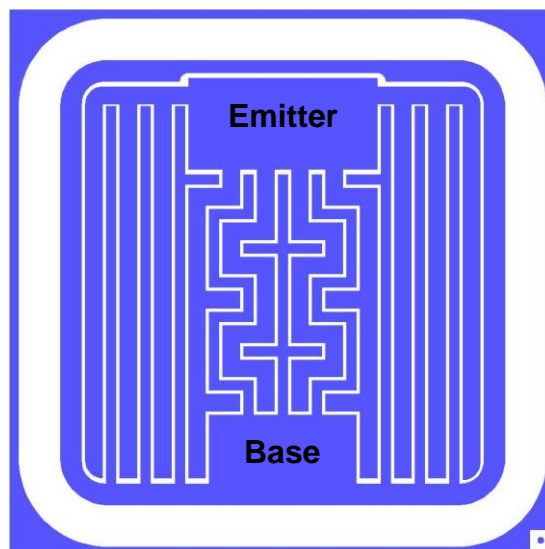
G175 Chip family

NPN Bipolar

DESCRIPTION	FEATURES
<p>The G175 chip family is an NPN bipolar multi-epitaxial planar transistor using SEMEFAB's ADVANCED DISTRIBUTED BASE TECHNOLOGY for improved performance over full temperature range.</p>	<ul style="list-style-type: none"> • HIGH CURRENT - UP TO 20 AMPS • HIGH VOLTAGE - UP TO 1200 VOLTS (V_{CBO}) • VERY FAST SWITCHING ($t_f = 40ns$) • IMPROVED PERFORMANCE OVER FULL TEMPERATURE RANGE <ul style="list-style-type: none"> ○ HIGH GAIN AT LOW TEMPERATURES ○ FAST SWITCHING AT HIGH TEMPERATURES

1.0 PHYSICAL FEATURES

DIE SIZE	128 mils x 128 mils
DIE THICKNESS	550 micron
FRONT METALLISATION	5 micron Aluminium
BACK METALLISATION	0.75 micron Aluminium/Titanium/Nickel/Gold
BOND PAD SIZE	
Emitter	16 mils x 33 mils
Base	16 mils x 29 mils





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2.0 TYPICAL CHARACTERISTICS

	G575	G675	G375	G275	GB75	GC75	Unit
V_{CBO}	200	250	400	600	900	1200	V
V_{CEO}	85	120	200	285	550	650	V
I_C	20	15	12	10	5	3	A
Similar to				BUL53B	BUL52B	BUL52A	

3.0 PROBED ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$)

Symbol	Parameter	Test Conditions	Type	Min	Typ	Max	Unit
V_{CEO}	Collector - Emitter Breakdown Voltage	$I_C = 1\text{mA}$ $I_B = 0$	GC75	600	650		V
			GB75	460	550		
			G275	280	285		
			G375	179	200		
			G675	116	120		
			G575	79	85		
I_{CES}	Collector Cut-Off Current	$V_{CEO} = 600\text{V}$ $V_{CEO} = 460\text{V}$ $V_{CEO} = 280\text{V}$ $V_{CEO} = 179\text{V}$ $V_{CEO} = 116\text{V}$ $V_{CEO} = 79\text{V}$	GC75			1	mA
			GB75				
			G275				
			G375				
			G675				
			G575				
I_{EBO}	Emitter-Base Cut-Off Current	$V_{EB} = 11\text{V}$ $I_C = 0$	ALL			1	mA
hfe	DC Current Gain	$I_C = 1\text{A}$ $V_{CE} = 5\text{V}$	GC75	20		45	
			GB75				
			G275	40	90		
			G375				
			G675				
			G575				
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 1\text{A}$ $I_B = 0.1\text{A}$	ALL			0.15	V



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