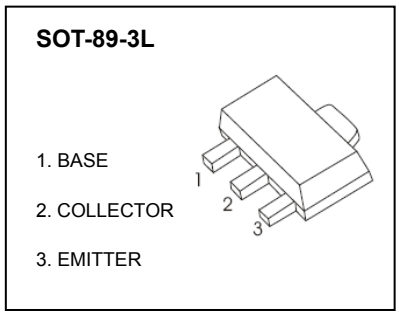
2SC3648 TRANSISTOR (NPN)



Applications

- High-Voltage Switching

Features

- High breakdown voltage and large current capacity
- Fast switching time
- Over Current Protection Function

Absolute Maximum Ratings (Ta=25℃)

PARAMETER	SYMBOL	RATINGS	UNIT
Collector to Base Voltage	V_{CBO}	180	V
Collector to Emitter Voltage	V_{CEO}	160	V
Emitter to Base Voltage	V_{EBO}	6	V
Collector Current	I_C	0.7	A
Collector Current (Pulse)	I_{CP}	1.5	A
Collector Dissipation	P_C	500	mW
Junction Temperature	T_J	150	°C
Storage Temperature	T_{STG}	-40 ~ +150	°C

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

Electrical Characteristics (Ta=25℃)

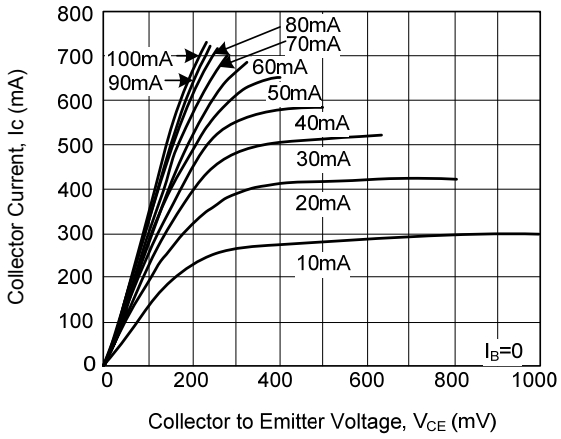
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	BV_{CBO}	I_C =10μA, I_E =0	180			V
Collector-Emitter Breakdown Voltage	BV_{CEO}	I_C =1, R_{BE} =∞	160			V
Emitter-Base Breakdown Voltage	BV_{EBO}	I_E =10μA, I_C=0	6			V
Collector Cutoff Current	I_{CBO}	V_{CB} =120V, I_E =0			0.1	μA
Emitter Cutoff Current	I_{EBO}	V_{EB} =4V, I_C =0			0.1	μA
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	I_C =250mA, I_B =25mA		0.12	0.4	V
Base-Emitter Saturation Voltage	$V_{BE(SAT)}$	I_C =250mA, I_B =25mA		0.85	1.2	V
Output Capacitance	Cob	V_{CB} =10V, f =1MHz		8		pF
DC Current Gain	h_{FE1}	V_{CE} =5V, I_C =100mA	100		400	
	h_{FE2}	V_{CE} =5V, I_C =10mA	90			
Turn-on Time	t_{ON}	See specified Test circuit		50		ns
Storage Time	t_{STG}	See specified Test circuit		1000		ns
Fall Time	t_F	See specified Test circuit		60		ns
Gain-Bandwidth Product	f_T	V_{CE} =5V, I_C =50mA		120		MHz

h_{FE} Classification

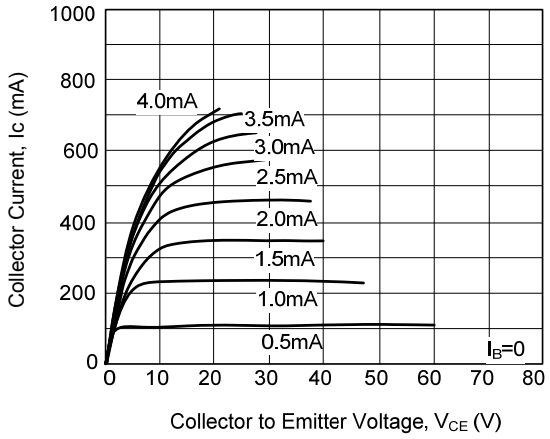
Classification	R	S	T
Range	100~200	140~280	200~400
Marking	CDR	CDS	CDT

Typical Characteristics

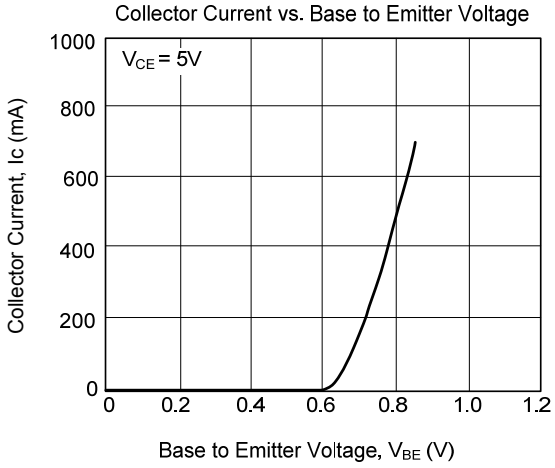
Collector Current vs.
Collector to Emitter Voltage



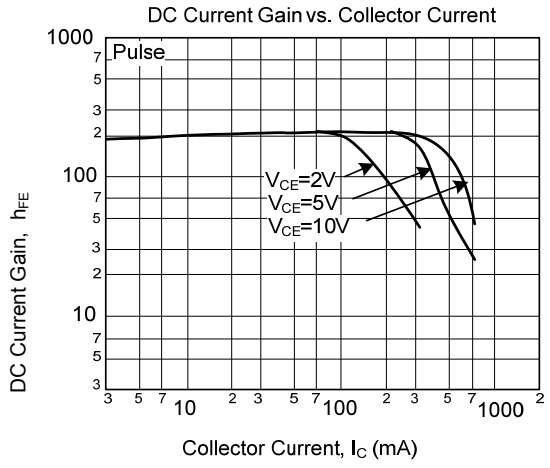
Collector Current vs.
Collector to Emitter Voltage



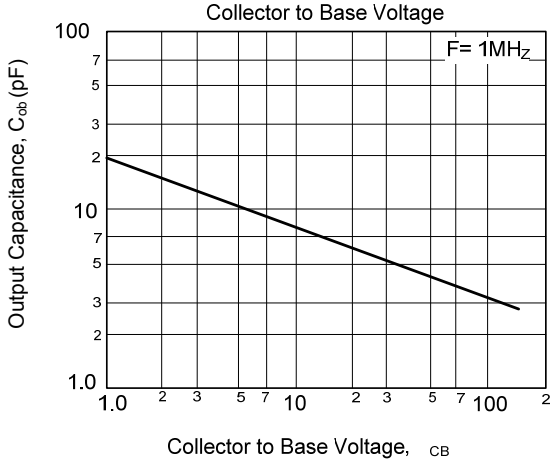
Collector Current vs. Base to Emitter Voltage



DC Current Gain vs. Collector Current



Output Capacitance vs.
Collector to Base Voltage



Collector-to-Emitter Saturation Voltage vs.
Collector Current