

**Silicon PNP transistor epitaxial type  
B5890**

**[ Applications ]**

Switching regulators / DC-DC convertors  
 Low-voltage drop out (LDO) linear regulator out-put  
 Battery chargers  
 Power management switches

**[ Feature ]**

Low collector-emitter saturation voltage  $V_{CE(sat)} = -0.21V(\text{Max.})$  at  $I_C = -2A, I_B = -0.2A$   
 High collector current  $I_{CP} = -5A$   
 High DC current gain  $h_{FE} = 100(\text{Min.})$  at  $V_{CE} = -2V, I_C = -3A$   
 Complement NPN type P/N D5890 available

**[ Absolute maximum ratings (Ta=25C) ]**

Characteristic	Symbol	Maximum ratings	Unit
Collector-base voltage	VCBO	-20	V
Collector-emitter voltage	VCEO	-20	V
Emitter-base voltage	VEBO	-5	V
Collector current	IC	-2	A
Collector current *1	ICRP	-3	A
Collector current *2	ICP	-5	A
Base current	IB	-0.5	A
Junction temperature	Tj	150	C
Storage temperature	Tstg	-55 to 150	C

\*1 Pulse width  $\leq 100\text{ms}$ , duty  $\leq 25\%$

\*2 Single pulse peak

**[ Electrical characteristics (Ta=25C) ]**

Characteristic	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BVCBO	-20	-	-	V	$I_C = -10\mu A, I_E = 0A$
Collector-emitter breakdown voltage	BVCEO	-20	-	-	V	$I_C = -1mA, I_B = 0A$
Emitter-base breakdown voltage	BVEBO	-5	-	-	V	$I_E = -10\mu A, I_C = 0A$
Collector cut-off current	ICBO	-	-	-100	nA	$V_{CB} = -20V, I_E = 0A$
Emitter cut-off current	IEBO	-	-	-100	nA	$V_{EB} = -5V, I_E = 0A$
DC current gain 1	$h_{FE} 1$	220	-	-	-	$V_{CE} = -2V, I_C = -0.1A$
DC current gain 2	$h_{FE} 2$	220	-	-	-	$V_{CE} = -2V, I_C = -0.5A$
DC current gain 3	$h_{FE} 3$	200	-	-	-	$V_{CE} = -2V, I_C = -1A$
DC current gain 4	$h_{FE} 4$	150	-	-	-	$V_{CE} = -2V, I_C = -2A$
DC current gain 5	$h_{FE} 5$	100	-	-	-	$V_{CE} = -2V, I_C = -3A$
Collector-emitter saturation voltage 1	$V_{CE(sat)} 1$	-	-	-70	mV	$I_C = -0.5A, I_B = -50mA$
Collector-emitter saturation voltage 2	$V_{CE(sat)} 2$	-	-	-130	mV	$I_C = -1A, I_B = -50mA$
Collector-emitter saturation voltage 3	$V_{CE(sat)} 3$	-	-	-230	mV	$I_C = -2A, I_B = -0.1A$
Collector-emitter saturation voltage 4	$V_{CE(sat)} 4$	-	-	-210	mV	$I_C = -2A, I_B = -0.2A$
Collector-emitter saturation voltage 5	$V_{CE(sat)} 5$	-	-	-300	mV	$I_C = -3A, I_B = -0.3A$
Collector-emitter on resistance	$R_{CE(sat)}$	-	75	105	m·ohm	$I_C = -2A, I_B = -0.2A$
Base-emitter saturation voltage 1	$V_{BE(sat)} 1$	-	-	-1.1	V	$I_C = -2A, I_B = -0.1A$
Base-emitter saturation voltage 2	$V_{BE(sat)} 2$	-	-	-1.2	V	$I_C = -3A, I_B = -0.3A$
Base-emitter on voltage	$V_{BE(on)}$	-	-	-1.2	V	$V_{CE} = -2V, I_C = -1A$
Transition frequency	fT	100	-	-	MHz	$V_{CE} = -5V, I_E = 0.1A$
Collector output capacitance	Cob	-	-	50	pF	$V_{CB} = -10V, f = 1MHz, I_E = 0A$

Notice 1) These are measured data of transistors assembled by PHENITEC SEMICONDUCTOR Corp. and are for reference only.

Notice 2) The contents described herein are subject to change without notice.

