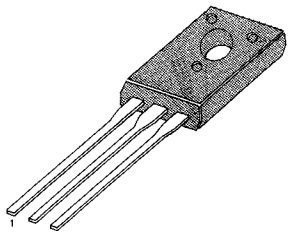
BD439/441 NPN EPITAXIAL SILICON TRANSISTOR

MEDIUM POWER LINEAR AND SWITCHING APPLICATIONS

- Complement to BD440, BD442 respectively

TO-126



1. Emitter 2.Collector 3.Base

ABSOLUTE MAXIMUM RATINGS

Characteristic		Symbol	Rating	Unit
Collector Base Voltage	: BD439	V_{CBO}	60	V
	: BD441		80	V
Collector Emitter Voltage	: BD439	V_{CES}	60	V
	: BD441		80	V
Collector Emitter Voltage	: BD439	V_{CEO}	60	V
	: BD441		80	V
Emitter Base Voltage		V_{EBO}	5	V
Collector Current (DC)		I_C	4	A
Collector Current (Pulse)		I_C	7	A
Base Current		I_B	1	A
Collector Dissipation (T_C=25℃)		P_C	36	W
Junction Temperature		T_J	150	℃
Storage Temperature		T_{STG}	-65 ~ 150	℃

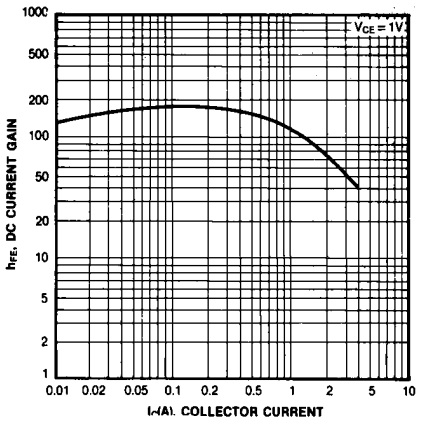
ELECTRICAL CHARACTERISTICS (T_C=25℃)

Characteristic		Symbol	Test Condition	Min	Typ	Max	Unit
* Collector Emitter Sustaining Voltage	: BD439	V_{CEO}(sus)	I_C = 100mA, I_B = 0	60			V
	: BD441			80			V
Collector Cutoff Current	: BD439	I_{CBO}	V_{CB} = 60V, I_E = 0			100	uA
	: BD441		V_{CB} = 80V, I_E = 0			100	uA
Collector Cutoff Current	: BD439	I_{CES}	V_{CE} = 60V, V_{BE} = 0			100	uA
	: BD441		V_{CE} = 80V, V_{BE} = 0			100	uA
Emitter Cutoff Current		I_{EBO}	V_{EB} = 5V, I_C = 0			1	mA
*DC Current Gain	: BD439	h_{FE}	V_{CE} = 5V, I_C = 10mA	20	130		
	: BD441			15	130		
	: BD439		V_{CE} =1V, I_C = 500mA	40	140		
	: BD441			40	140		
	: BD439		V_{CE} = 1V, I_C = 2A	25			
	: BD441			15			
* Collector Emitter Saturation Voltage		V_{CE}(sat)	I_C = 2A, I_B = 0.2A			0.8	V
*Base Emitter On Voltage		V_{BE}(on)	V_{CE} = 5V, I_C = 10mA		0.58		V
			V_{CE} = 1V, I_C = 2A			1.5	V
Transition Frequency		f_T	V_{CE} = 1V, I_C = 250mA	3			MHz

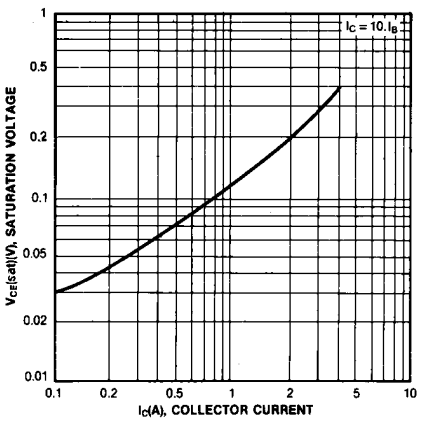
* Pulse Test : PW=300uS, duty Cycle=1.5% Pulsed

SAMSUNG ELECTRONICS

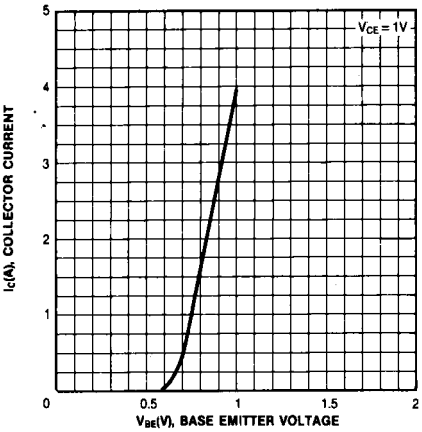
DC CURRENT GAIN



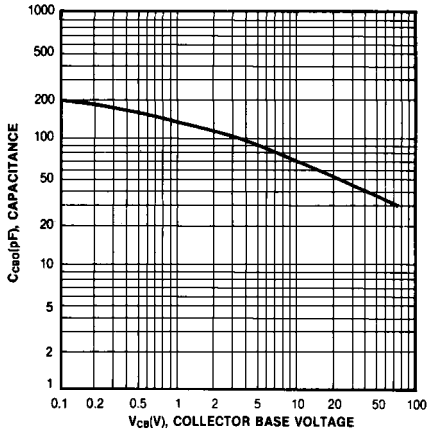
COLLECTOR EMITTER SATURATION VOLTAGE



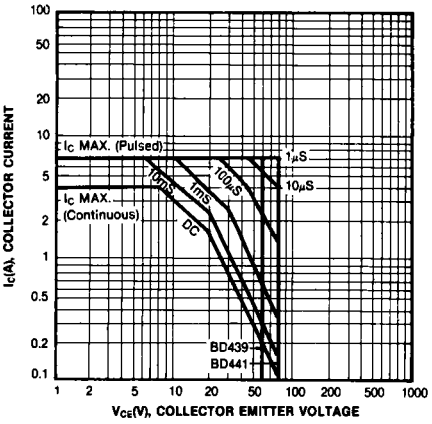
BASE EMITTER VOLTAGE



COLLECTOR BASE CAPACITANCE



SAFE OPERATING AREA



POWER DERATING