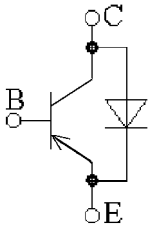
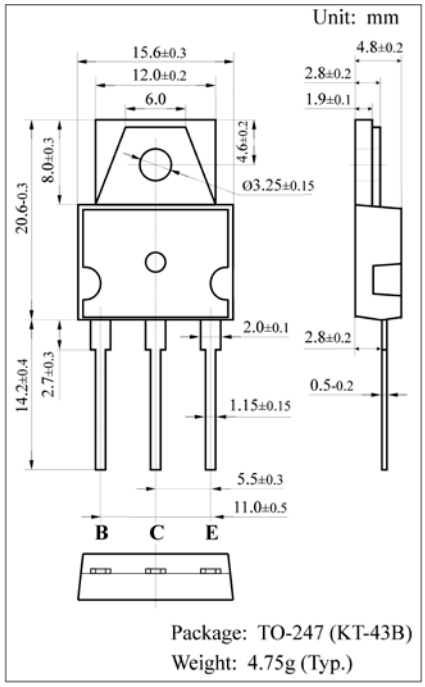
TRANSISTOR SILICON PNP EPITAXAL TYPE

VL035DP

POWER AMPLIFIER APPLICATIONS

- High Transition Frequency: fr=100MHz (Min.)
- Complementary to VL035DN
- Recommended for 100W High Fidelity Audio Frequency Amplifier Output Stage



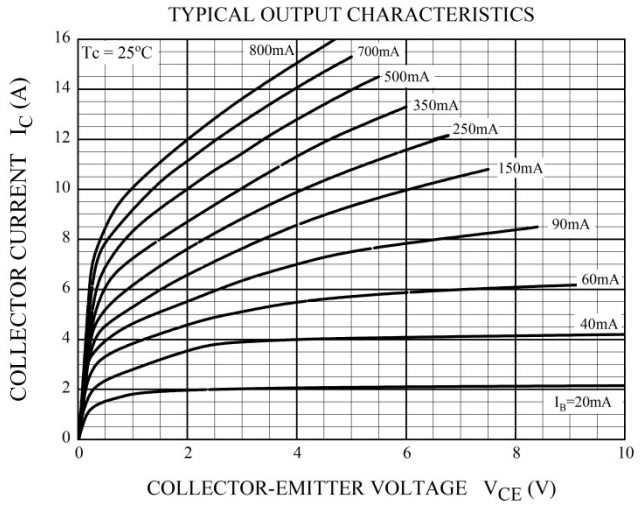


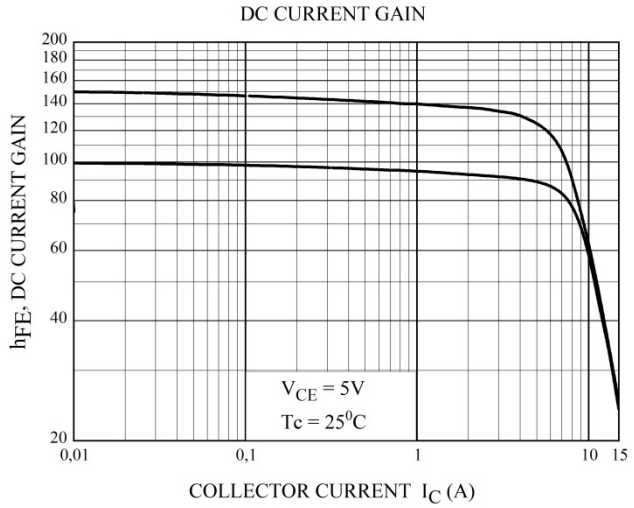
MAXIMUM RATINGS (Ta = 25^{0}C)

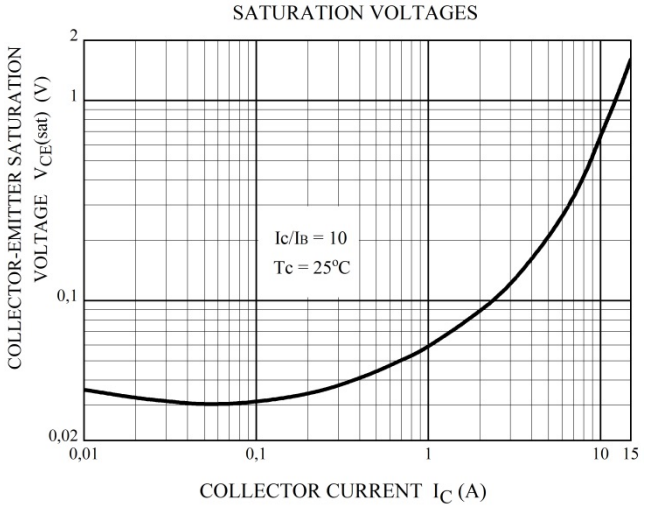
CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	-230	V
Collector-Emitter Voltage	V_{CEO}	-200	V
Emitter-Base Voltage	V_{EBO}	-5	V
Collector Current	I_C	-15	A
Base Current	I_B	-3	A
Diode Forward Voltage	I_F	-15	A
Collector Power Dissipation (T_C=25^{0}C)	P_C	150	W
Junction Temperature	Tj	175	^{0}C
Storage Temperature Range	Tstg	-60 to +150	^{0}C

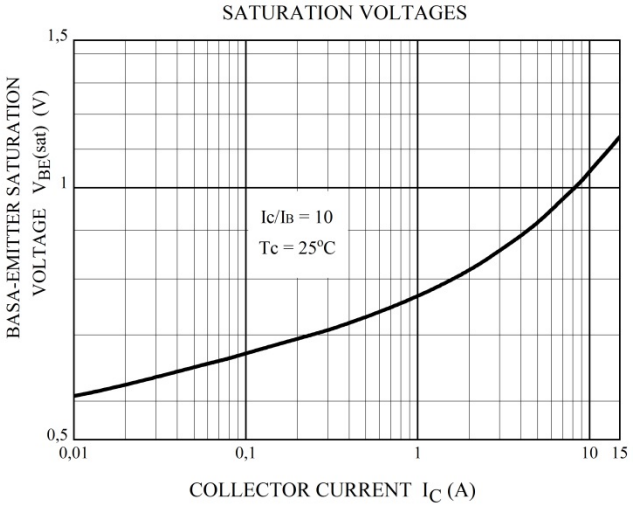
ELECTRICAL CHARACTERISTICS (Ta = 25^{0}C)

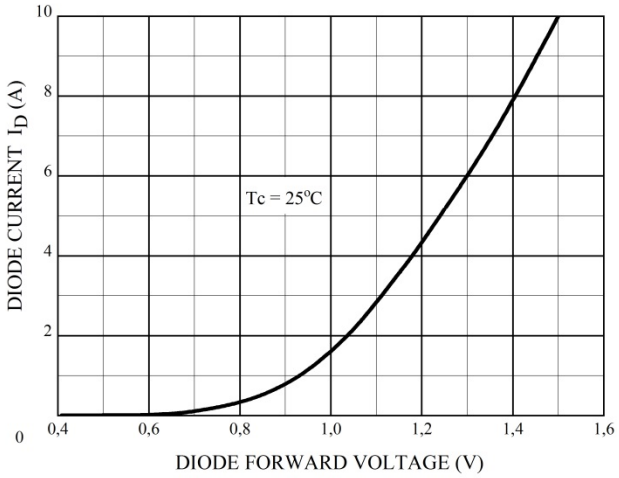
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I_{CBO}	V_{CB}=-200V, I_E=0	—	—	-50.0	μA
Emitter Cut-off Current	I_{EBO}	V_{EB}=-5V, I_C=0	—	—	-50.0	μA
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=-50mA, I_B=0	-200	—	—	V
DC Current Gain	H_{21E}	V_{CE}=-5V, I_C=-1A	60	—	150	
		V_{CE}=-5V, I_C=-7A	—	70	—	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=-7A, I_B=-0.7A	—	-0.30	-1.0	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	I_C=-7A, I_B=-0.7A	—	-1.0	-1.5	V
Diode Forward Voltage	V_F	I_F=-10A	—	-1.5	-2.0	V
Transition Frequency	f_T	V_{CE}=-10V, I_C=-1A	100	—	—	MHz
Collector Output Capacitance	C_{OB}	V_{CB}=10V, I_E=0, f=lMHz	—	370	400	pF

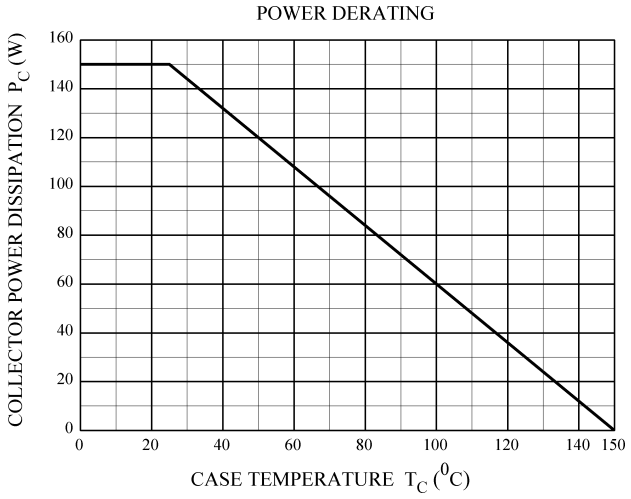

TYPICAL OUTPUT CHARACTERISTICS
Tc = 25°C
800mA
700mA
500mA
350mA
250mA
150mA
90mA
60mA
40mA
IB=20mA
COLLECTOR CURRENT IC (A)
COLLECTOR-EMITTER VOLTAGE VCE (V)
0
2
4
6
8
10
12
14
16

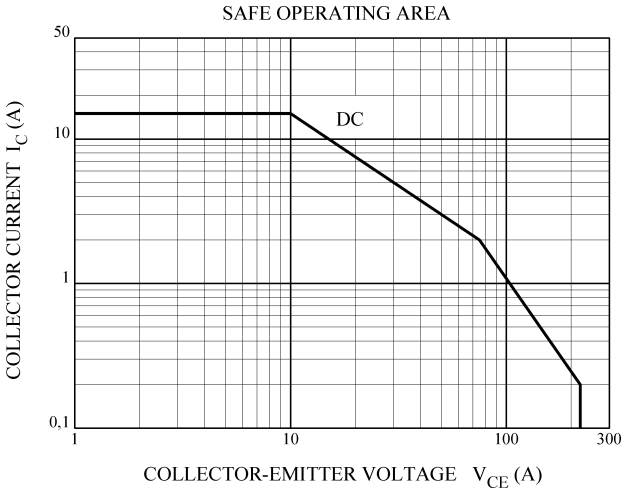

DC CURRENT GAIN
hFE, DC CURRENT GAIN
VCE = 5V
Tc = 25°C
COLLECTOR CURRENT IC (A)
20
40
60
80
100
120
140
160
180
200
0,01
0,1
1
10
15


SATURATION VOLTAGES
COLLECTOR-EMITTER SATURATION VOLTAGE VCE(sat) (V)
Ic/IB = 10
Tc = 25°C
COLLECTOR CURRENT IC (A)
0,02
0,1
1
2
0,01
0,1
1
10
15


SATURATION VOLTAGES
BASA-EMITTER SATURATION VOLTAGE VBE(sat) (V)
Ic/IB = 10
Tc = 25°C
COLLECTOR CURRENT IC (A)
0,5
1
1,5
0,01
0,1
1
10
15


DIODE CURRENT ID (A)
Tc = 25°C
DIODE FORWARD VOLTAGE (V)
0
2
4
6
8
10
0,4
0,6
0,8
1,0
1,2
1,4
1,6


POWER DERATING
COLLECTOR POWER DISSIPATION P_C (W)
160
140
120
100
80
60
40
20
0
0
20
40
60
80
100
120
140
150
CASE TEMPERATURE T_C (^{0}C)


SAFE OPERATING AREA
COLLECTOR CURRENT I_C (A)
50
10
1
0,1
DC
1
10
100
300
COLLECTOR-EMITTER VOLTAGE V_{CE} (A)