NPN Epitaxial Silicon Transistor

KSC2383

ON Semiconductor®

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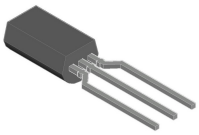


TO−92 3 LF
CASE 135AM

ABSOLUTE MAXIMUM RATINGS

(Values are at T_A = 25°C unless otherwise noted.)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector−Base Voltage	160	V
V_{CEO}	Collector−Emitter Voltage	160	V
V_{EBO}	Emitter−Base Voltage	6	V
I_C	Collector Current	1	A
I_B	Base Current	0.5	A
T_J	Junction Temperature	150	°C
T_{STG}	Storage Temperature	−55 to +150	°C

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

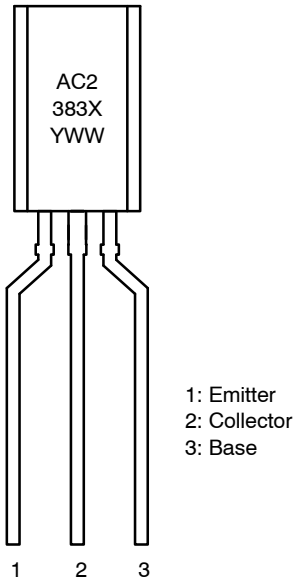
THERMAL CHARACTERISTICS

(Values are at T_A = 25°C unless otherwise noted.) (Note 1)

Symbol	Parameter	Value	Unit
P_D	Power Dissipation	900	mW
	Derate Above 25°C	7.2	mW/°C
$R_{\theta JA}$	Thermal Resistance, Junction−to−Ambient	138	°C/W

1. PCB size: FR−4, 76 mm × 114 mm × 1.57 mm (3.0 inch × 4.5 inch × 0.062 inch) with minimum land pattern size.

MARKING DIAGRAM



A = Assembly Code
C2383 = Device Code
X = O / Y
YWW = Date Code

ORDERING INFORMATION

Device	Package	Shipping
KSC2383OTA	TO−92 3 LF (Pb−Free)	2000 / Fan−Fold
KSC2383YTA	TO−92 3 LF (Pb−Free)	2000 / Fan−Fold

ELECTRICAL CHARACTERISTICS

(Values are at T_A = 25°C unless otherwise noted.)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_{CBO}	Collector Cut−Off Current	V_{CB} = 150 V, I_E = 0	–	–	1	μA
I_{EBO}	Emitter Cut−Off Current	V_{EB} = 6 V, I_C = 0	–	–	1	μA
BV_{CEO}	Collector−Emitter Breakdown Voltage	I_C = 10 mA, I_B = 0	160	–	–	V
h_{FE}	DC Current Gain	V_{CE} = 5 V, I_C = 200 mA	60	–	320	
V_{CE}(sat)	Collector−Emitter Saturation Voltage	I_C = 500 mA, I_B = 50 mA	–	–	1.5	V
V_{BE}(on)	Base−Emitter On Voltage	V_{CE} = 5 V, I_C = 5 mA	0.45	–	0.75	V
f_T	Current Gain Bandwidth Product	V_{CE} = 5 V, I_C = 200 mA	20	100	–	MHz
C_{ob}	Output Capacitance	V_{CB} = 10 V, I_E = 0, f = 1 MHz	–	–	20	pF

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

h_{FE} CLASSIFICATION

Classification	R	O	Y
h_{FE}	60 ~ 120	100 ~ 200	160 ~ 320

TYPICAL PERFORMANCE CHARACTERISTICS

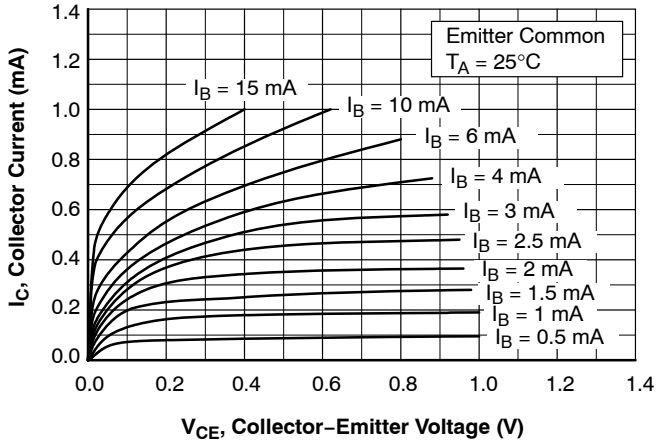


Figure 1. Static Characteristic

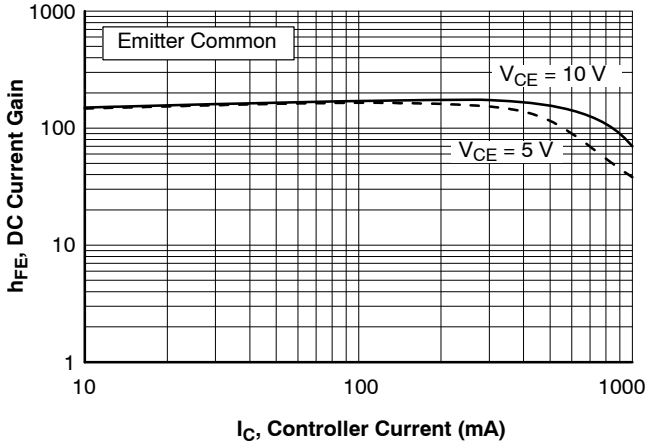


Figure 2. DC Current Gain

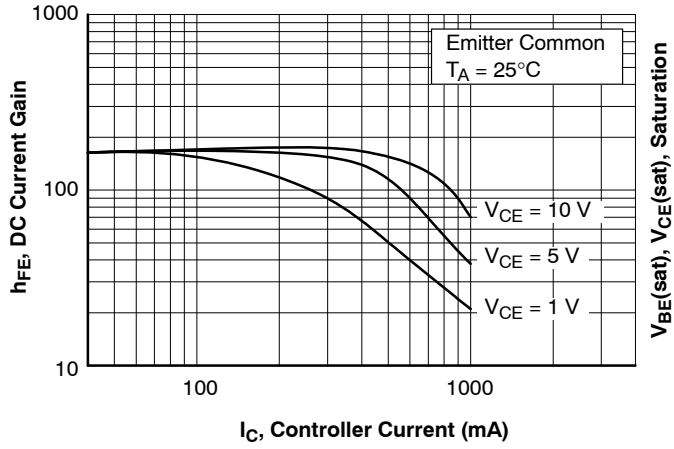


Figure 3. DC Current Gain

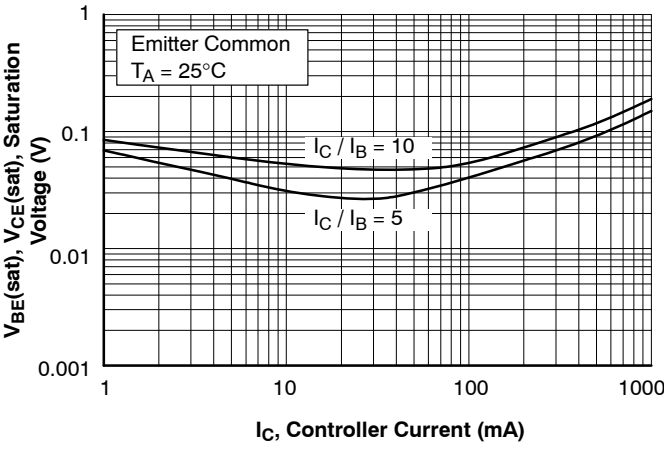


Figure 4. Collector−Emitter Saturation Voltage

TYPICAL PERFORMANCE CHARACTERISTICS (Continued)

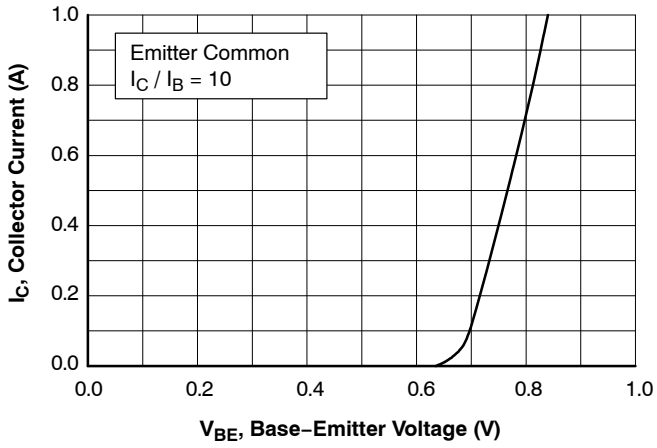


Figure 5. Base−Emitter On Voltage

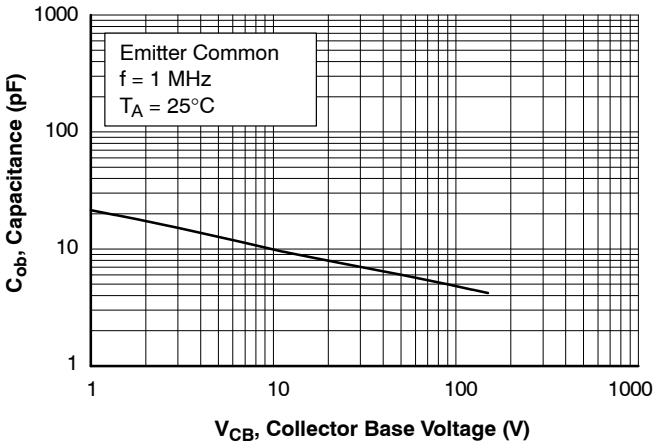


Figure 6. Collector Output Capacitance

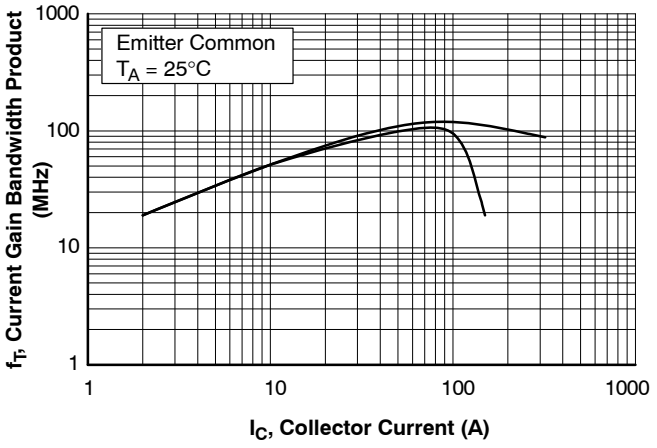


Figure 7. Current Gain Bandwidth Product

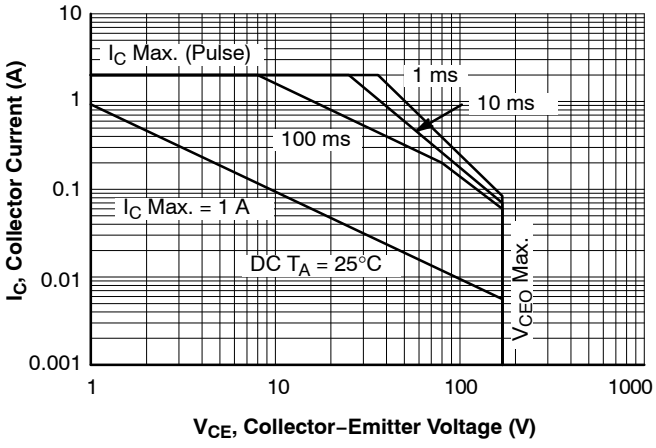
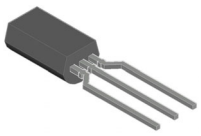
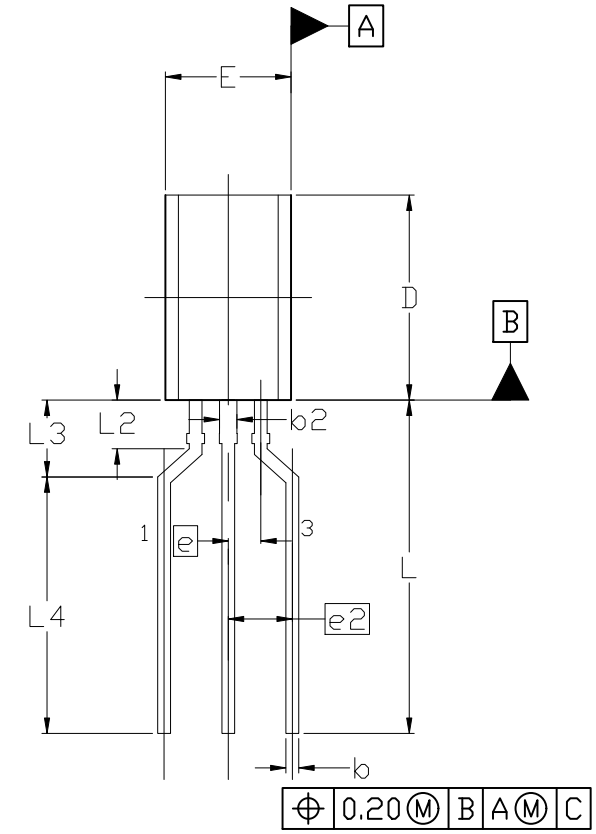


Figure 8. Safe Operating Area

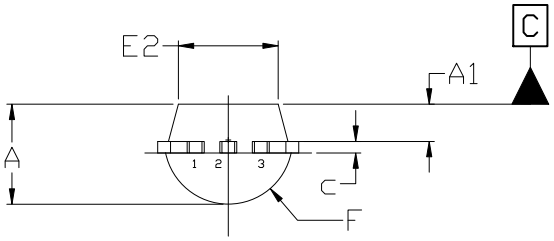


TO−92 3 8.0x4.9 (LEADFORMED)
CASE 135AM
ISSUE B

DATE 14 JAN 2021



TOP VIEW



END VIEW

NOTES:
1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 2009.
2. CONTROLLING DIMENSION: MILLIMETERS
3. DIMENSIONS ARE EXCLUSIVE OF BURRS, MOLD FLASH, GATE REMAINS AND TIE BAR PROTRUSIONS.
4. DIMENSION b AND b2 DOES NOT INCLUDE DAMBAR PROTRUSION. DIMENSION b2 LOCATED ABOVE THE DAMBAR PORTION OF MIDDLE LEAD.

	MILLIMETERS		
DIM	MIN.	NOM.	MAX.
A	3.70	3.90	4.10
A1	1.25	1.45	1.65
b	0.35	0.50	0.60
b2	0.62	---	0.78
c	0.35	0.45	0.55
D	7.80	8.00	8.20
E	4.70	4.90	5.10
E2	3.70	3.90	4.10
e	1.27 BSC		
e2	2.50 BSC		
F	2.45 REF		
L	13.00 REF		
L2	1.50	---	1.90
L3	2.60	---	3.40
L4	10.40 REF		

ADDITIONAL INFORMATION

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