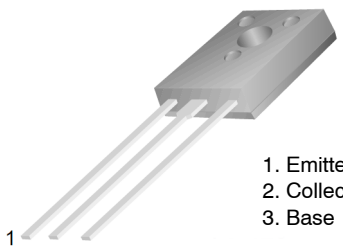
NPN Epitaxial Silicon Darlington Transistor

KSE800



1. Emitter
2. Collector
3. Base

TO−126−3LD
CASE 340AS

Features

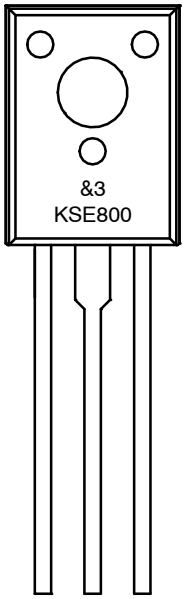
- Monolithic Construction with Built−in Base−Emitter Resistors
- High DC Current Gain: h_{FE} = 750 (Min.) @ I_C = 1.5 and 2.0 A DC
- Complement to KSE700
- This is a Pb−Free Device

ABSOLUTE MAXIMUM RATINGS (T_C = 25°C unless otherwise noted)

Symbol	Parameter	Value	Units
V_{CBO}	Collector−Base Voltage	60	V
V_{CEO}	Collector−Emitter Voltage	60	V
V_{EBO}	Emitter−Base Voltage	5	V
I_C	Collector Current	4	A
I_B	Base Current	0.1	A
P_C	Collector Dissipation (T_C = 25°C)	40	W
T_J	Junction Temperature	150	°C
T_{STG}	Storage Temperature	−55 ~ 150	°C

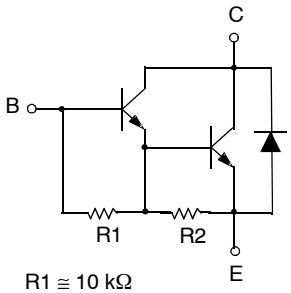
Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

MARKING DIAGRAM



&3 = 3−Digit Date Code
KSE800 = Specific Device Code

EQUIVALENT CIRCUIT



R1 ≅ 10 kΩ
R2 ≅ 0.6 kΩ

ORDERING INFORMATION

Device	Package	Shipping
KSE800STU	TO−126−3LD (Pb−Free)	1920 Units / Tube

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ELECTRICAL CHARACTERISTICS (T_C = 25°C unless otherwise noted)

Symbol	Parameter	Test Condition	Min	Max	Units
BV_{CEO}	Collector−Emitter Breakdown Voltage	I_C = 50 mA, I_B = 0	60		V
I_{CEO}	Collector Cut−off Current	V_{CE} = 60 V, I_B = 0		100	μA
I_{CBO}	Collector Cut−off Current	V_{CB} = Rated BV_{CEO}, I_E = 0 V_{CB} = Rated BV_{CEO}, I_E = 0, T_C = 100°C		100 500	μA
I_{EBO}	Emitter Cut−off Current	V_{BE} = 5 V, I_C = 0		2	mA
h_{FE}	DC Current Gain	V_{CE} = 3 V, I_C = 1.5 A V_{CE} = 3 V, I_C = 4 A	750 100		
V_{CE}(sat)	Collector−Emitter Saturation Voltage	I_C = 1.5 A, I_B = 30 mA I_C = 4 A, I_B = 40 mA		2.5 3	V
V_{BE}(on)	Base−Emitter On Voltage	V_{CE} = 3 V, I_C = 1.5 A V_{CE} = 3 V, I_C = 4 A		2.5 3	V

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.

TYPICAL CHARACTERISTICS

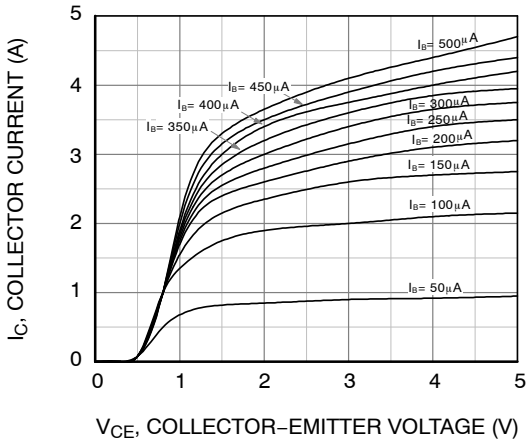

Figure 1. Static Characteristic

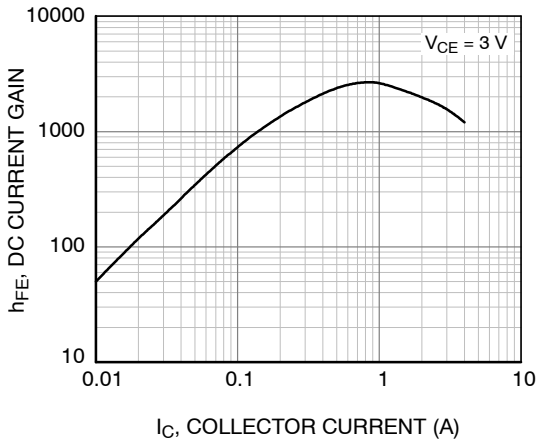

Figure 2. DC Current Gain

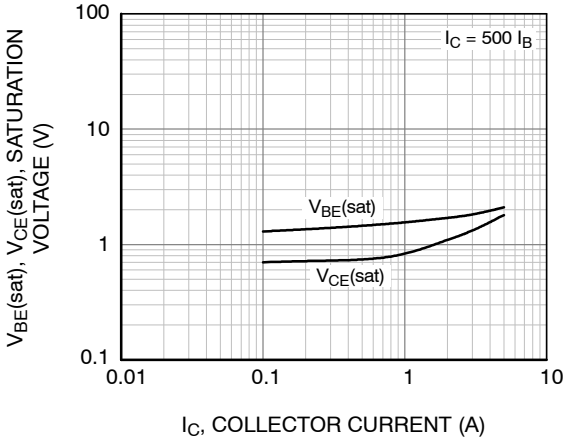

Figure 3. Collector−Emitter Saturation Voltage Base−Emitter Saturation Voltage

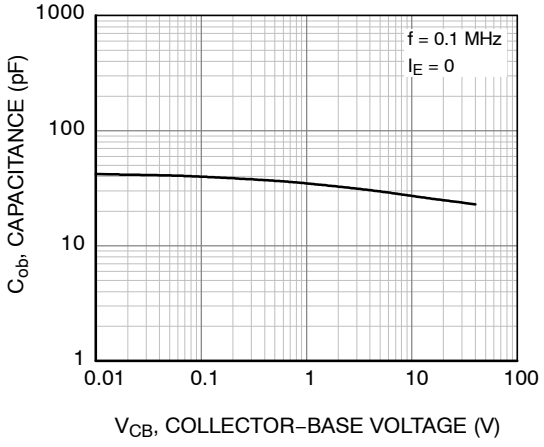

Figure 4. Collector Output Capacitance

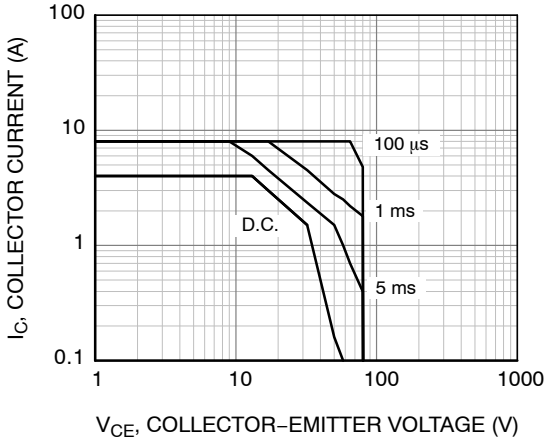

Figure 5. Safe Operating Area

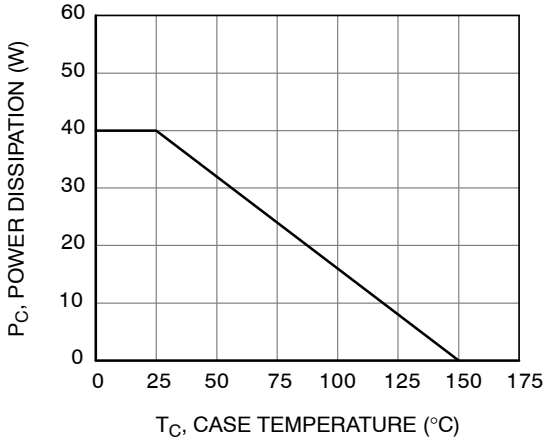

Figure 6. Power Derating

TO−126−3LD
CASE 340AS
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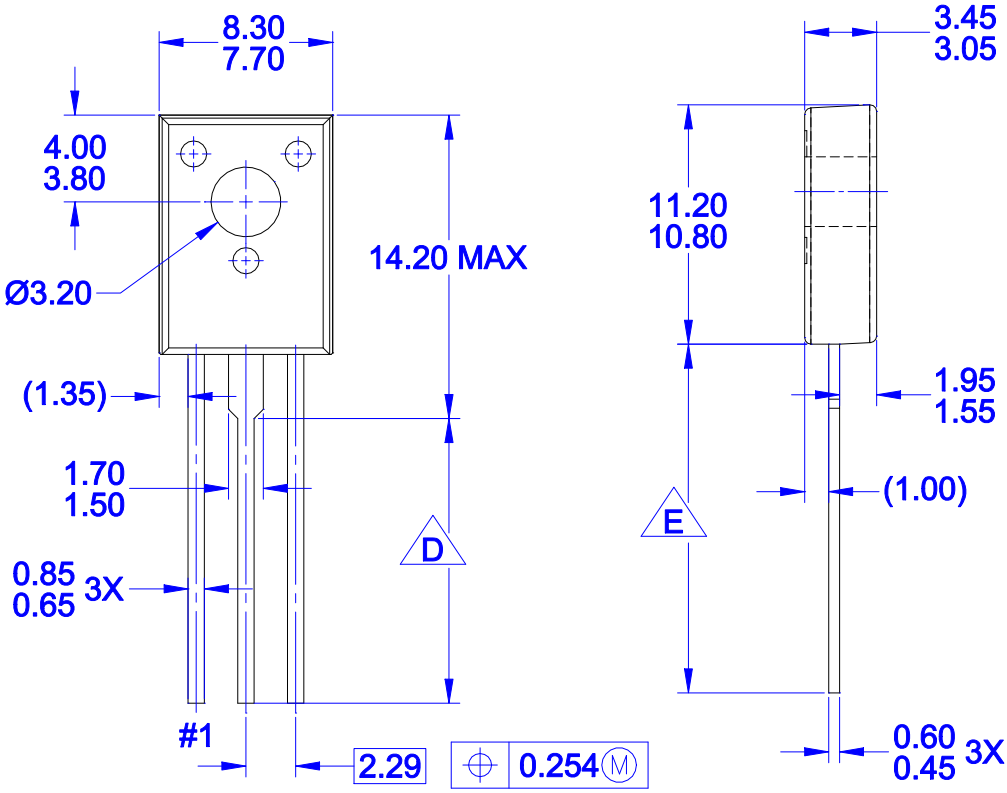
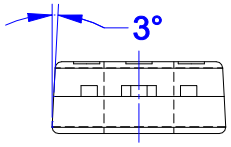
DATE 30 SEP 2016



TOP VIEW

SIDE VIEW



FRONT VIEW

PRODUCTION CODE	TERMINAL LENGTH "D"	TERMINAL LENGTH "E"
TSSTU	3.45 - 4.05	6.45 - 7.45
TSTU	2.36 - 2.96	5.36 - 6.36
NONE (STD LENGTH)	12.76 - 13.36	15.76 - 16.76

NOTES:

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B. ALL DIMENSIONS ARE IN MILLIMETERS
C. DIMENSIONS ARE EXCLUSIVE OF BURRS, MOLD FLASH, AND TIE BAR PROTRUSIONS

D FOR TERMINAL LENGTH "D", REFER TO TABLE

E FOR TERMINAL LENGTH "E", REFER TO TABLE

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