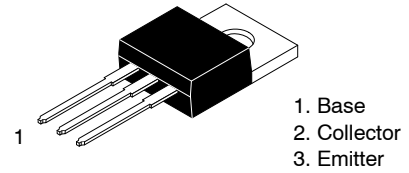


NPN Silicon Transistor

KSC5027

High Voltage and High Reliability

- High Speed Switching
- Wide SOA



TO-220-3LD
CASE 340AT

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

Symbol	Parameter	Ratings	Unit
V _{CBO}	Collector-Base Voltage	1100	V
V _{CEO}	Collector-Emitter Voltage	800	V
V _{EBO}	Emitter-Base Voltage	7	V
I _C	Collector Current (DC)	3	A
I _{CP}	Collector Current (Pulse)	10	A
I _B	Base Current	1.5	A
P _C	Collector Dissipation (T _C = 25°C)	50	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 = Date Code (Year & Week)
- &K = Lot Run Traceability Code
- C5027 = Specific Device Code
- O = h_{FE} Grade

ORDERING INFORMATION

Device	Package	Shipping
KSC5027OTU	TO-220-3LD (Pb-Free, Halide Free)	1000 Units / Tube

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

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
BV _{CBO}	Collector-Base Breakdown Voltage	I _C = 1 mA, I _E = 0	1100	-	-	V
BV _{CEO}	Collector-Emitter Breakdown Voltage	I _C = 5 mA, I _B = 0	800	-	-	V
BV _{EBO}	Emitter-Base Breakdown Voltage	I _E = 1 mA, I _C = 0	7	-	-	V
V _{CEX(sus)} 1	Collector-Emitter Sustaining Voltage	I _C = 1.5 A, I _{B1} = -I _{B2} = 0.3 A, L = 2 mH, Clamped	800	-	-	V
I _{CBO}	Collector Cut-off Current	V _{CB} = 800 V, I _E = 0	-	-	10	μA
I _{EBO}	Emitter Cut-off Current	V _{EB} = 5 V, I _C = 0	-	-	10	μA
h _{FE1} h _{FE2}	DC Current Gain	V _{CE} = 5 V, I _C = 0.2 A V _{CE} = 5 V, I _C = 1 A	10 8	-	40	
V _{CE(sat)}	Collector-Emitter Saturation Voltage	I _C = 1.5 A, I _B = 0.3 A	-	-	2	V
V _{BE(sat)}	Base-Emitter Saturation Voltage	I _C = 1.5 A, I _B = 0.3 A	-	-	1.5	V
C _{ob}	Output Capacitance	V _{CB} = 10 V, I _E = 0, f = 1 MHz	-	60	-	μs
f _T	Current Gain Bandwidth Product	V _{CE} = 10 V, I _C = 0.2 A	-	15	-	MHz
t _{ON}	Turn On Time	V _{CC} = 400 V, I _C = 5 A, I _{B1} = -2.5, I _{B2} = 2 A, R _L = 200 Ω	-	-	0.5	μs
t _{STG}	Storage Time		-	-	3	μs
t _F	Fall Time		-	-	0.3	μs

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	N	R	O
H _{FE1}	10 ~ 20	15 ~ 30	20 ~ 40

TYPICAL CHARACTERISTICS

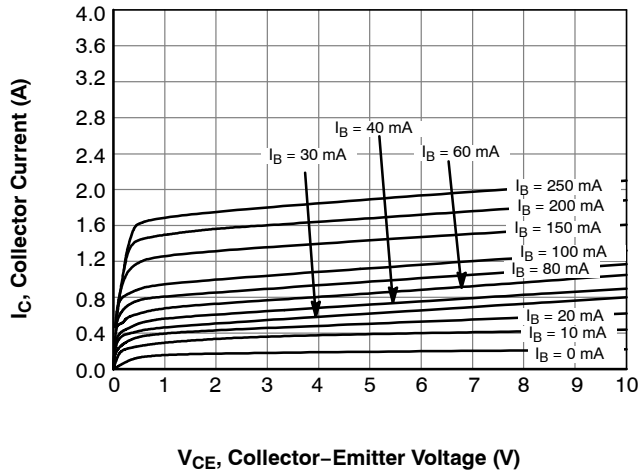


Figure 1. Static Characteristic

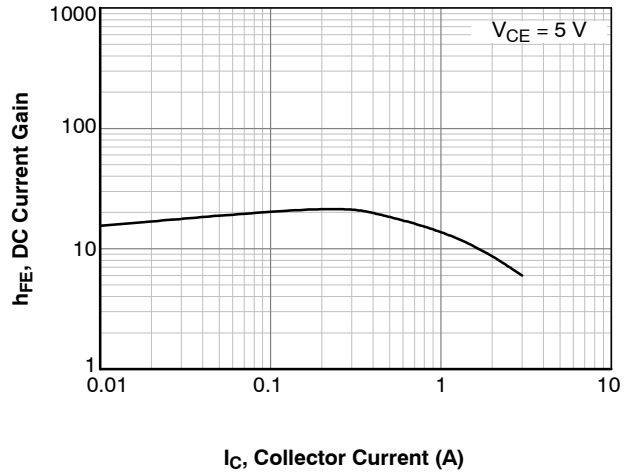


Figure 2. DC Current Gain

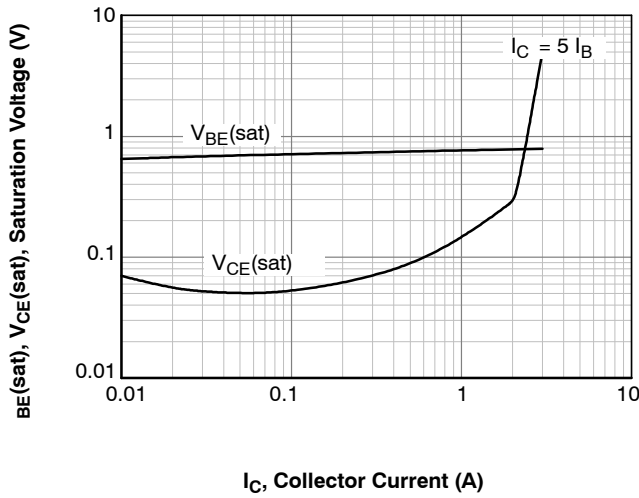


Figure 3. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

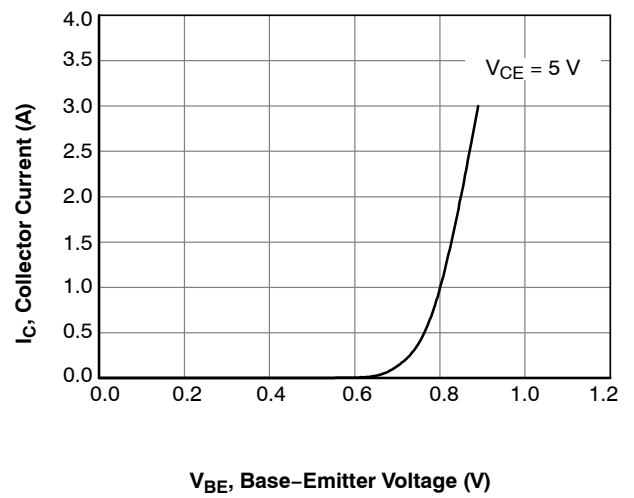


Figure 4. Base-Emitter On Voltage

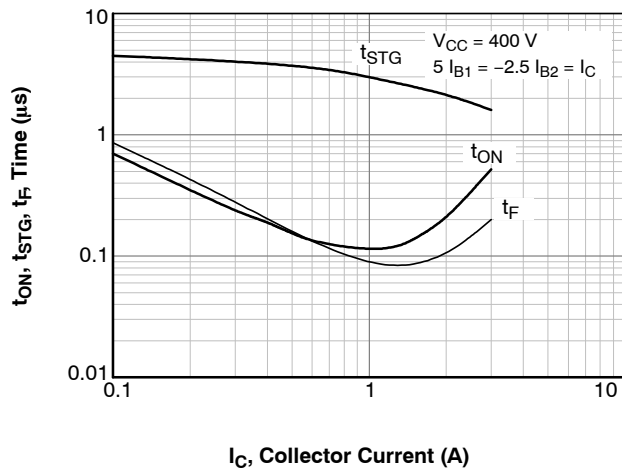


Figure 5. Switching Time

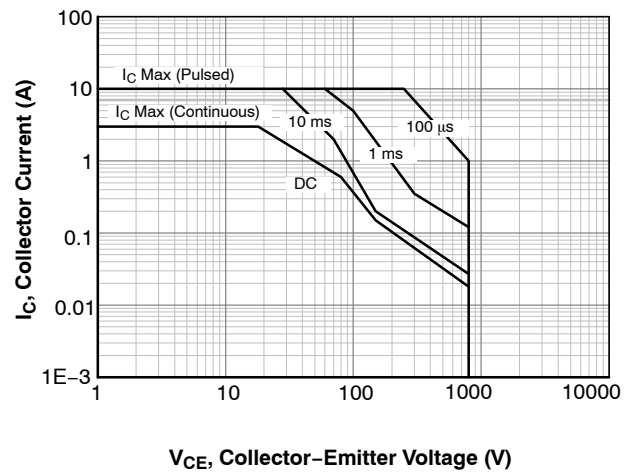
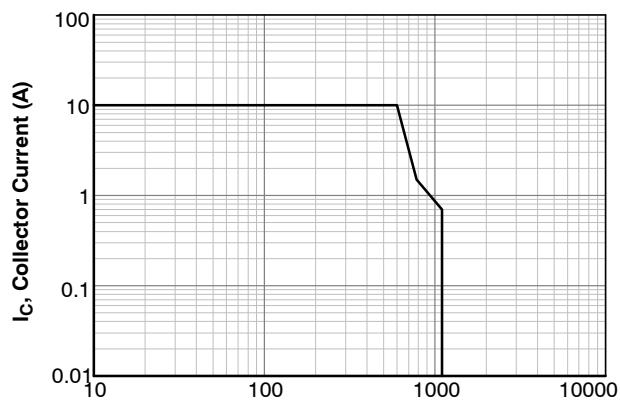


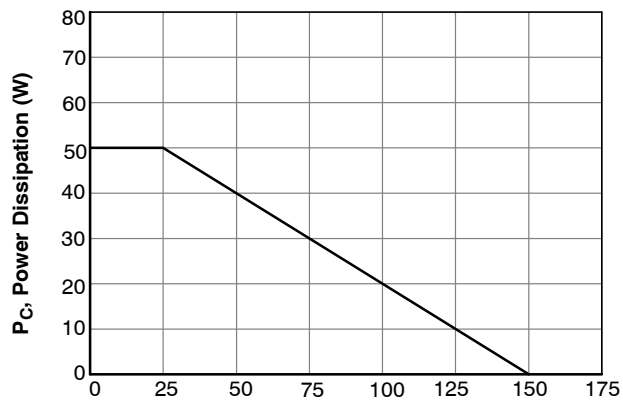
Figure 6. Safe Operating Area

TYPICAL CHARACTERISTICS (Continued)



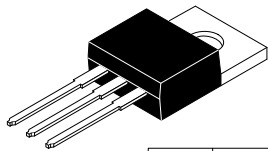
V_{CE} , Collector-Emitter Voltage (V)

Figure 7. Reverse Bias Operating Areas



T_C , Case Temperature ($^{\circ}C$)

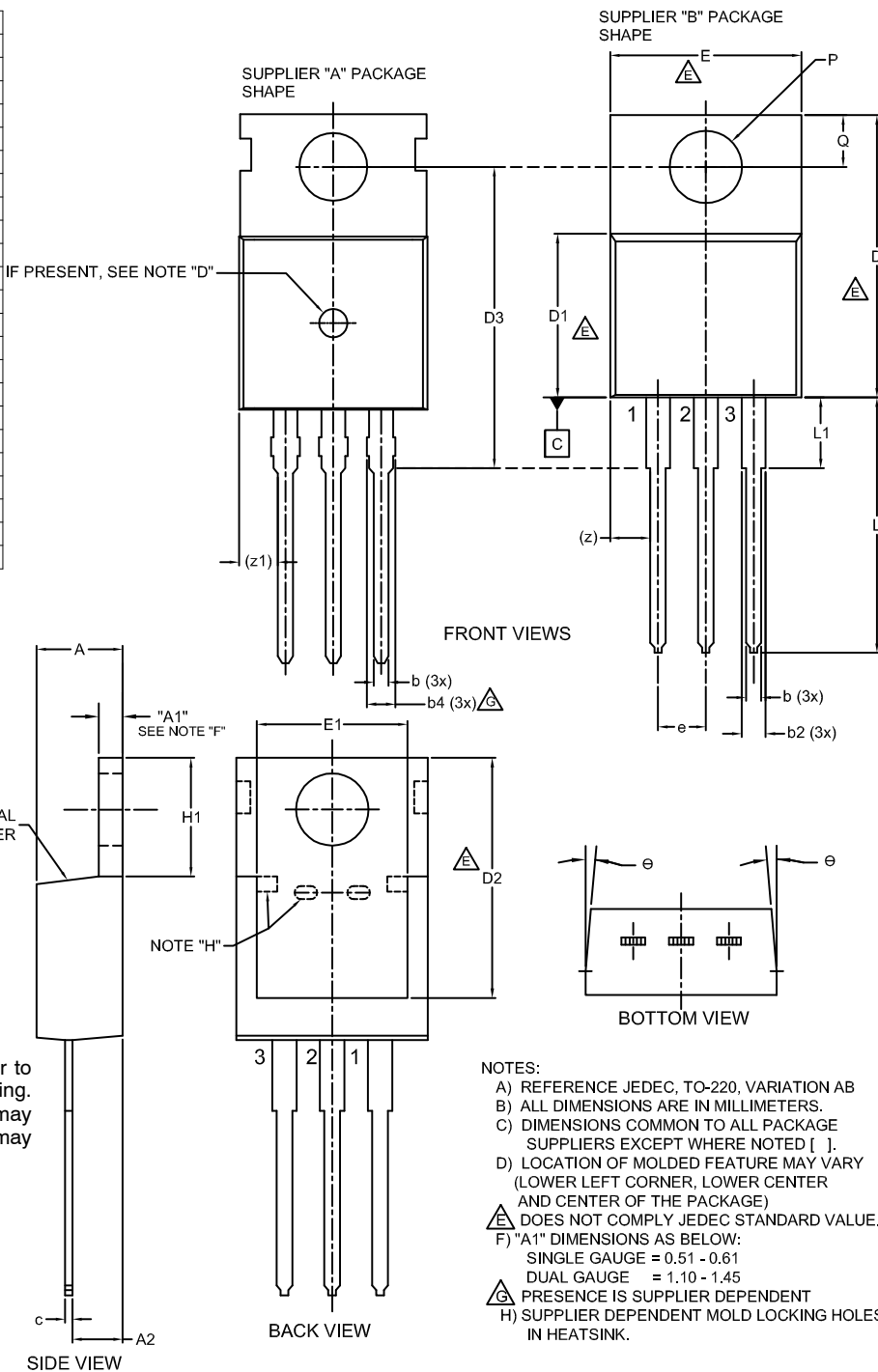
Figure 8. Power Derating



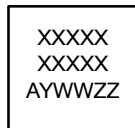
TO-220-3LD
CASE 340AT
ISSUE B

DATE 08 AUG 2022

DIM	MILLIMETERS		
	MIN.	NOM.	MAX.
A	4.00	--	4.70
A1	SEE NOTE "F"		
A2	2.10	--	2.85
b	0.55	--	1.00
b2	1.10	--	1.62
b4	1.42	--	1.62
c	0.36	--	0.60
D	13.90	--	16.30
D1	8.13	--	9.40
D2	11.50	--	14.30
D3	15.42	--	16.51
E	9.65	--	10.67
E1	7.59	--	8.65
e	2.40	--	2.67
H1	6.06	--	6.69
L	12.70	--	14.04
L1	2.70	--	4.10
P	3.50	--	4.00
Q	2.50	--	3.40
z	2.13 REF		
z1	2.06 REF		
θ	3°	--	5°



GENERIC MARKING DIAGRAM*



XXXX = Specific Device Code
 A = Assembly Location
 Y = Year
 WW = Work Week
 ZZ = Assembly Lot Code

*This information is generic. Please refer to device data sheet for actual part marking. Pb-Free indicator, "G" or microdot "•", may or may not be present. Some products may not follow the Generic Marking.

NOTES:

- A) REFERENCE JEDEC, TO-220, VARIATION AB
- B) ALL DIMENSIONS ARE IN MILLIMETERS.
- C) DIMENSIONS COMMON TO ALL PACKAGE SUPPLIERS EXCEPT WHERE NOTED [].
- D) LOCATION OF MOLDED FEATURE MAY VARY (LOWER LEFT CORNER, LOWER CENTER AND CENTER OF THE PACKAGE)
- ⚠ DOES NOT COMPLY JEDEC STANDARD VALUE.
- F) "A1" DIMENSIONS AS BELOW:
 SINGLE GAUGE = 0.51 - 0.61
 DUAL GAUGE = 1.10 - 1.45
- ⚠ PRESENCE IS SUPPLIER DEPENDENT
- H) SUPPLIER DEPENDENT MOLD LOCKING HOLES IN HEATSINK.

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