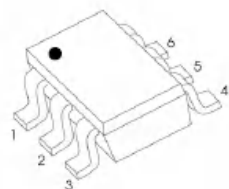
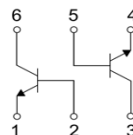


MARKING:K6N

FEATURES

Epitaxial planar die construction
Ideal for low power amplification and switching



SOT-363

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

MAXIMUM RATINGS ($T_a=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	60	V
V_{CEO}	Collector-Emitter Voltage	40	V
V_{EBO}	Emitter-Base Voltage	5	V
I_c	Collector Current -Continuous	0.2	A
P_c	Collector Power Dissipation	0.2	W
T_J	Junction Temperature	150	$^{\circ}\text{C}$
T_{stg}	Storage Temperature	-55-150	$^{\circ}\text{C}$

ELECTRICAL CHARACTERISTICS (Ta=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=10\mu A, I_E=0$	60			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=1mA, I_B=0$	40			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=10\mu A, I_C=0$	5			V
Collector cut-off current	I_{CBO}	$V_{CB}=30V, I_E=0$			0.05	μA
Emitter cut-off current	I_{EBO}	$V_{EB}=5V, I_C=0$			0.05	μA
Collector cut-off current	I_{CEX}	$V_{CE}=30V, V_{BE(off)}=-3V$			0.05	μA
DC current gain	$h_{FE(1)}$	$V_{CE}=1V, I_C=1mA$	70			
	$h_{FE(2)}$	$V_{CE}=1V, I_C=10mA$	100		300	
	$h_{FE(3)}$	$V_{CE}=1V, I_C=50mA$	60			
	$h_{FE(4)}$	$V_{CE}=1V, I_C=100mA$	30			
Collector-emitter saturation voltage	$V_{CE(sat)1}$	$I_C=10mA, I_B=1mA$			0.2	V
	$V_{CE(sat)2}$	$I_C=50mA, I_B=5mA$			0.3	V
Base-emitter saturation voltage	$V_{BE(sat)1}$	$I_C=10mA, I_B=1mA$	0.65		0.85	V
	$V_{BE(sat)2}$	$I_C=50mA, I_B=5mA$			0.95	V
Transition frequency	f_T	$V_{CE}=20V, I_C=10mA, f=100MHz$	300			MHz
Collector output capacitance	C_{ob}	$V_{CB}=5V, I_E=0, f=1MHz$			4	pF
Noise figure	NF	$V_{CE}=5V, I_C=0.1mA, f=1kHz, R_S=1K\Omega$			5	dB
Delay time	t_d	$V_{CC}=3V, V_{BE(off)}=-0.5V$			35	nS
Rise time	t_r	$I_C=10mA, I_{B1}=-I_{B2}=1mA$			35	nS
Storage time	t_s	$V_{CC}=3V, I_C=10mA$			200	nS
Fall time	t_f	$I_{B1}=-I_{B2}=1mA$			50	nS

RATING AND CHARACTERISTIC CURVES

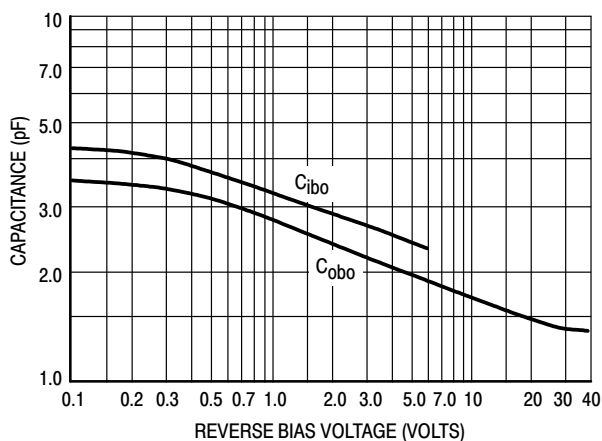


Figure 1. Capacitance

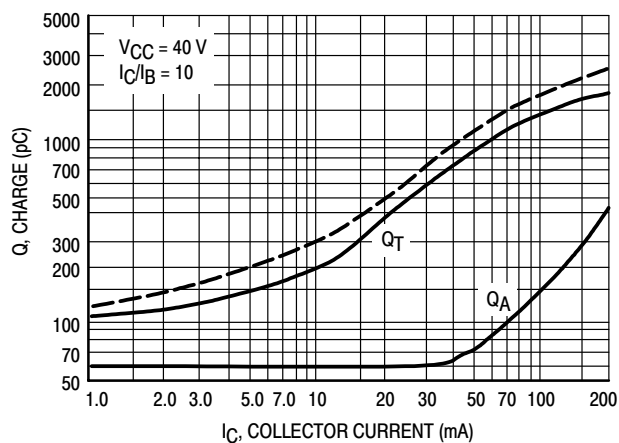


Figure 2. Charge Data

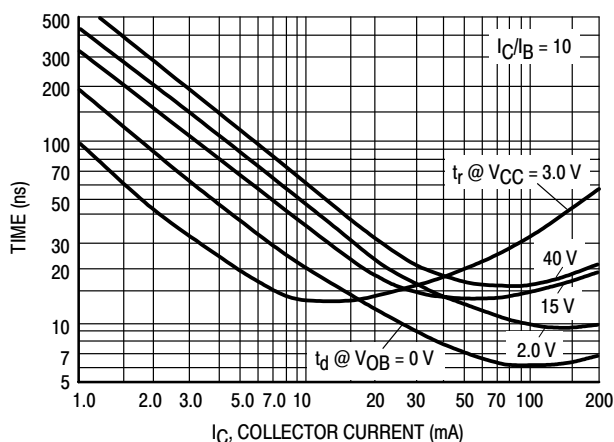


Figure 3. Turn-On Time

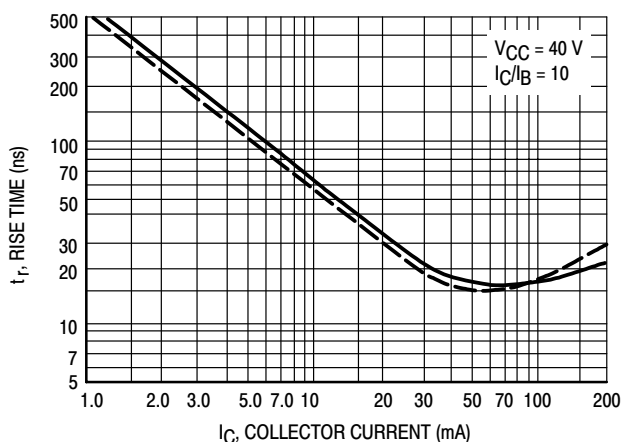


Figure 4. Rise Time

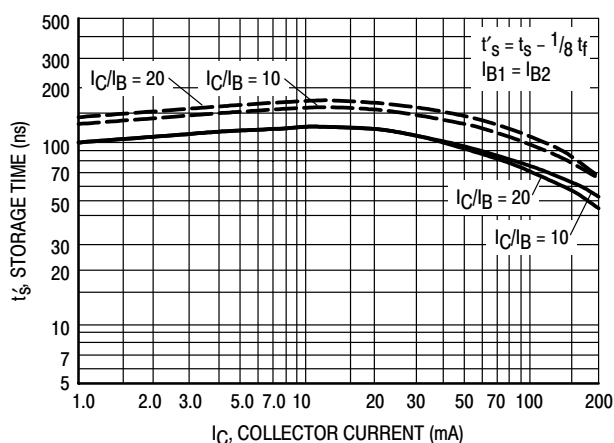


Figure 5. Storage Time

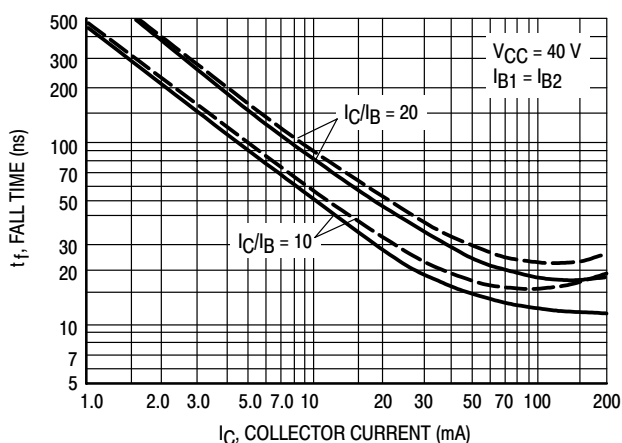


Figure 6. Fall Time

RATING AND CHARACTERISTIC CURVES

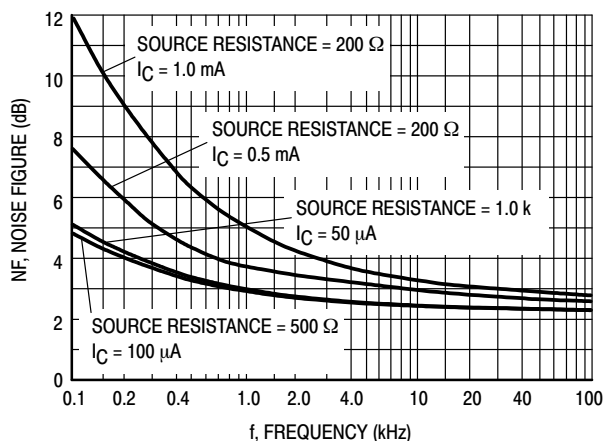


Figure 7. Noise Figure

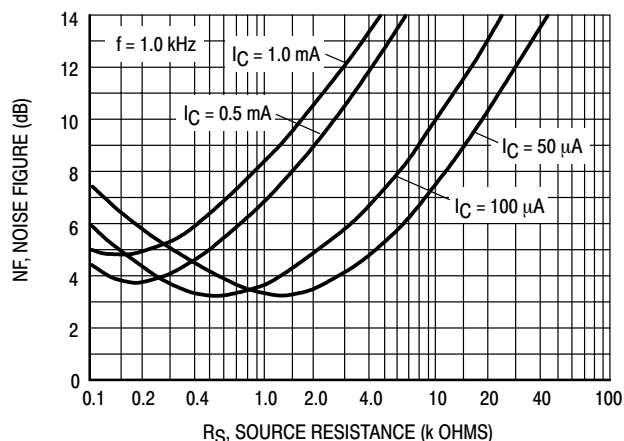


Figure 8. Noise Figure

h PARAMETERS

($V_{CE} = 10 \text{ Vdc}$, $f = 1.0 \text{ kHz}$, $T_A = 25^\circ\text{C}$)

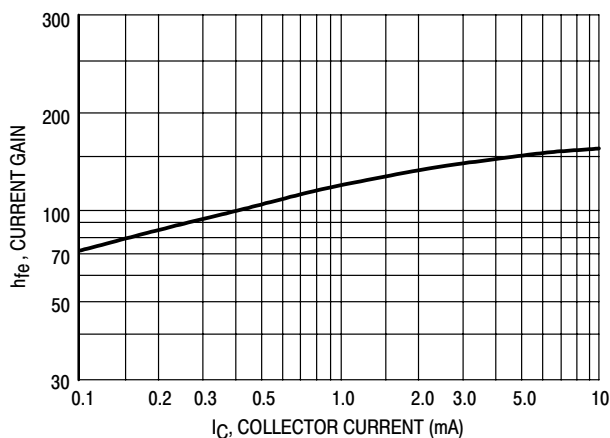


Figure 9. Current Gain

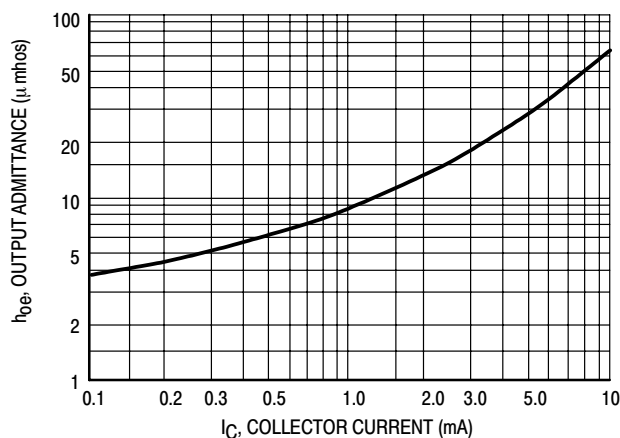


Figure 10. Output Admittance

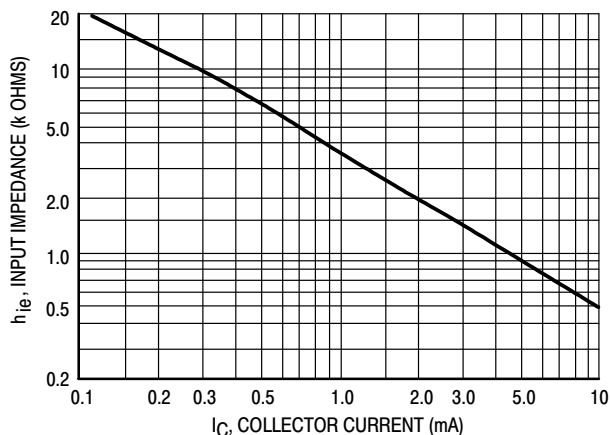


Figure 11. Input Impedance

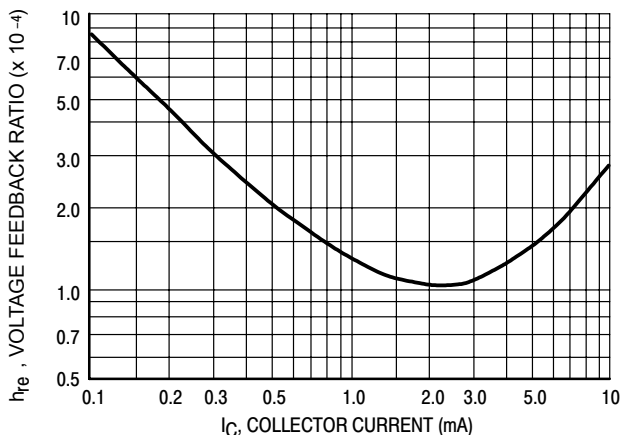


Figure 12. Voltage Feedback Ratio

RATING AND CHARACTERISTIC CURVES

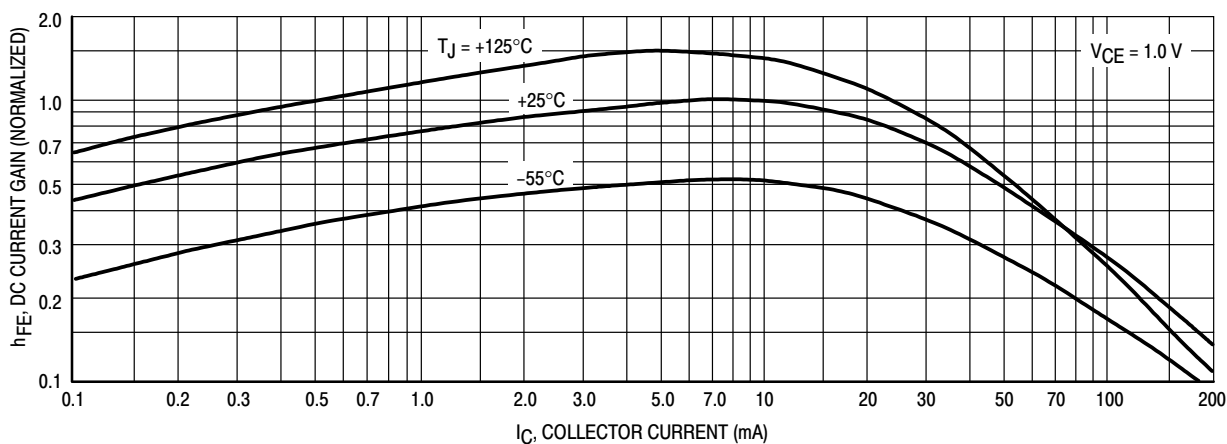


Figure 13. DC Current Gain

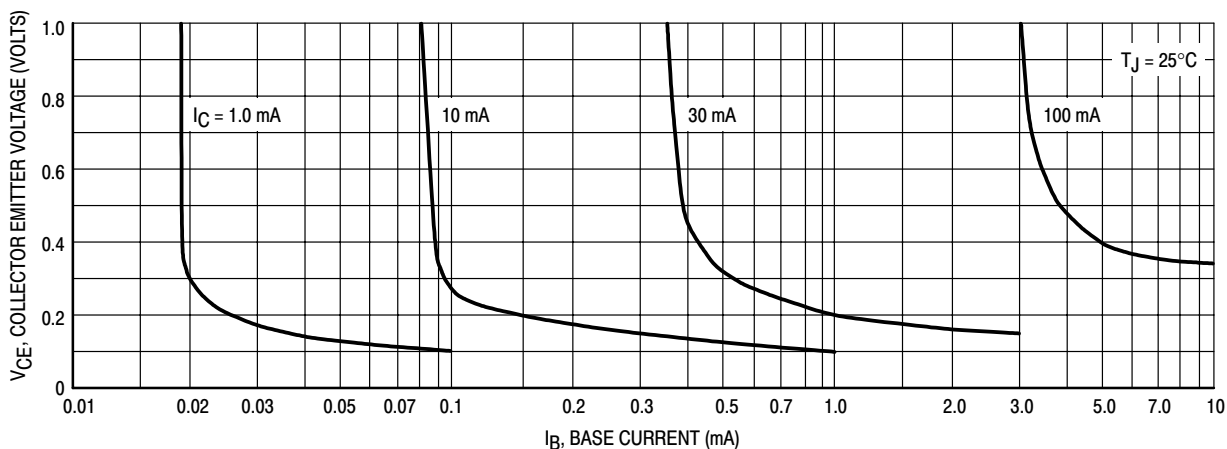


Figure 14. Collector Saturation Region

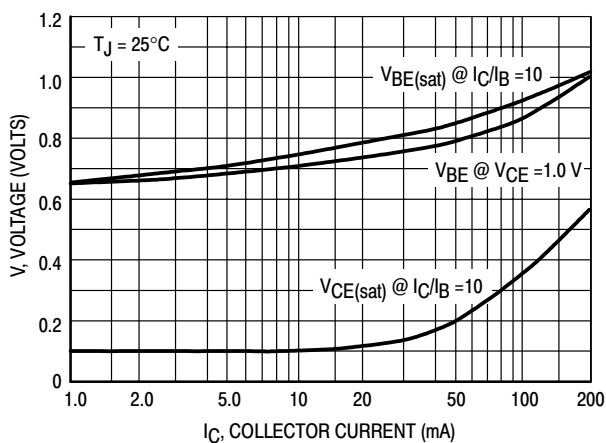


Figure 15. "ON" Voltages

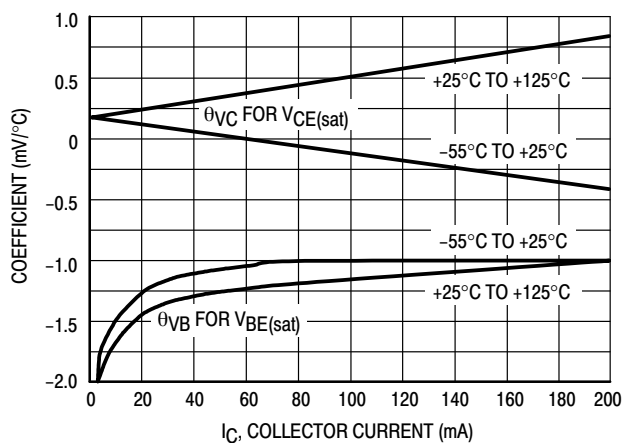
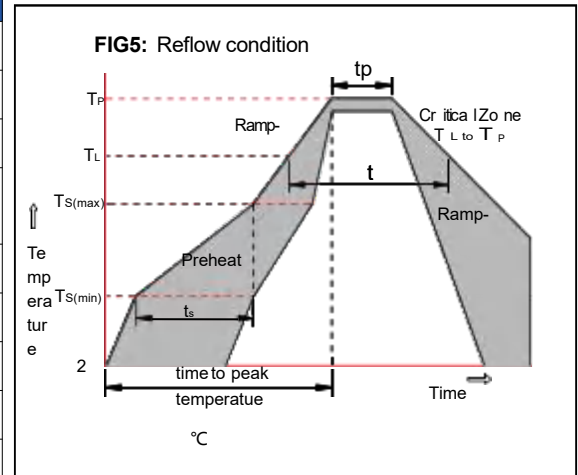


Figure 16. Temperature Coefficients

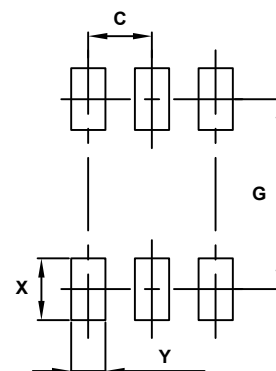
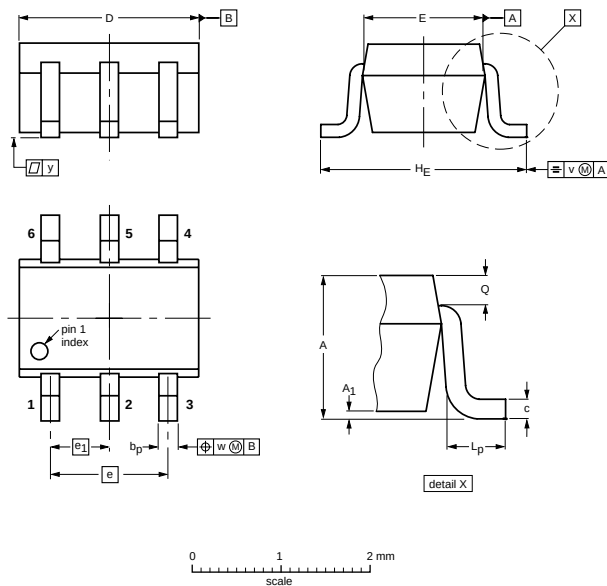
Soldering parameters

Reflow Condition		Pb-Free assembly (see as below)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150 °C
	-Temperature Max ($T_{s(max)}$)	+200 °C
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3 °C/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3 °C/sec. Max
Reflow	-Temperature (T_L) (Liquid us)	+217 °C
	-Temperature (t_L)	60-150 secs.
Peak Temp (T_P)		+260(+0/-5) °C
Time within 5 °C of actual Peak Temp (t_P)		30 secs. Max
Ramp-down Rate		6 °C/sec. Max
Time 25 °C to Peak Temp (T_P)		8 min. Max
Do not exceed		+260 °C



Package Dimensions & Suggested Pad Layout

SOT-363



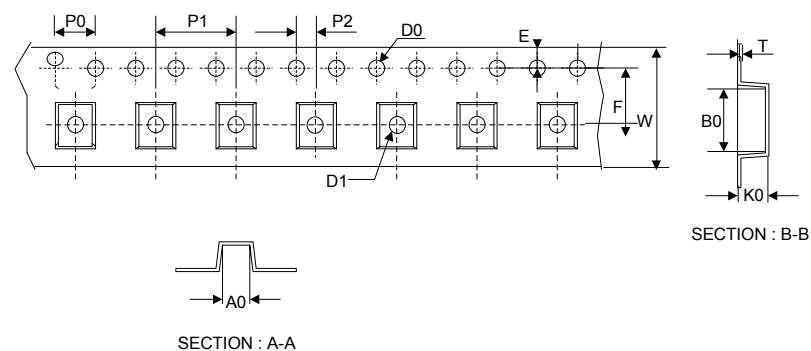
Dimensions	Value (in mm)
C	0.65
G	1.90
X	0.85
Y	0.40

DIMENSIONS (mm are the original dimensions)

UNIT	A	A1 max	bp	c	D	E	e	e1	HE	Lp	Q	v	w	y
mm	1.1 0.8	0.1	0.30 0.20	0.25 0.10	2.2 1.8	1.35 1.15	1.3	0.65	2.2 2.0	0.45 0.15	0.25 0.15	0.2	0.2	0.1

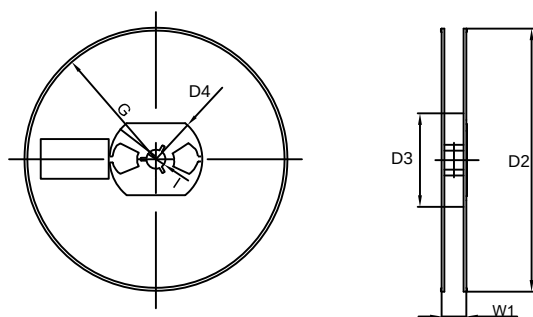
Tape & reel specification

Tape



Symbol	Dimension (mm)
P0	4.00±0.20
P1	4.00±0.20
P2	2.00±0.20
D0	1.55±0.20
D1	1.00±0.20
E	1.55±0.25
F	3.60±0.20
W	8.00±0.20
A0	3.00±0.20
B0	3.00±0.20
K0	1.30±0.20
T	0.20±0.20
D2	177.0±5.0
D3	55Min.
D4	R24.6±2.0
G	R82.0±2.0
I	13.0±2.0
W1	10.20±3.0

7" Reel



Quantity: 3000PCS