DIODES INCORPORATED

DMDT9922

PNP DUAL, MATCHED PAIR SURFACE MOUNT TRANSISTOR

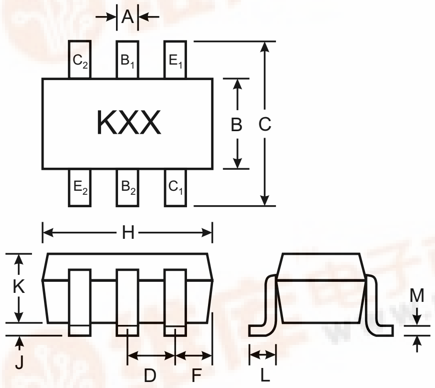
ADVANCE INFORMATION

Features

- Epitaxial Planar Die Construction
- Low Noise
- High Current Gain
- Matched Pair of Transistors

Mechanical Data

- Case: SOT-363, Molded Plastic
- Terminals: Solderable per MIL-STD-202, Method 208
- Terminal Connections: See Diagram
- Marking: K3S
- Weight: .006 grams (approx.)



SOT-363		
Dim	**Min**	**Max**
A	0.10	0.30
B	1.15	1.35
C	2.00	2.20
D	0.65 Nominal	
F	0.30	0.40
H	1.80	2.20
J	—	0.10
K	0.90	1.00
L	0.25	0.40
M	0.10	0.25
All Dimensions in mm		

Maximum Ratings

@ T_A = 25°C unless otherwise specified

Characteristic	Symbol	DMDT9922	Unit
Collector-Base Voltage	V_{CBO}	-50	V
Collector-Emitter Voltage	V_{CEO}	-40	V
Emitter-Base Voltage	V_{EBO}	-5.0	V
Collector-Collector Voltage	V_{CCO}	-50	V
Emitter-Emitter Voltage	V_{EEO}	-50	V
Collector Current - Continuous (Note 1)	I_C	-100	mA
Power Dissipation (Note 1)	P_d	200	mW
Thermal Resistance, Junction to Ambient (Note 1)	$R_{\theta JA}$	625	K/W
Operating and Storage and Temperature Range	T_j, T_{STG}	-55 to +125	°C

Electrical Characteristics @ T_A = 25°C unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
OFF CHARACTERISTICS (Note 2)						
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	-50	—	—	V	I_C = -50μA, I_E = 0
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	-40	—	—	V	I_C = -1.0mA, I_B = 0
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	-5.0	—	—	V	I_E = -50μA, I_C = 0
Collector-Base Leakage Current	I_{CBO}	—	-0.3	-500	nA	V_{CB} = -30V
Emitter-Base Leakage Current	I_{EBO}	—	—	-500	nA	V_{EB} = -4.0V
Collector-Emitter Leakage Current	I_{CES}	—	-4	-1000	nA	V_{CE} = -40V
ON CHARACTERISTICS (Note 2)						
DC Current Gain	h_{FE}	300	450	555	—	I_C = -1.0mA, V_{CE} = -6.0V
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$ $V_{CE(SAT)}$	— —	-0.1 -0.1	-0.5 —	V V	I_C = -50mA, I_B = -5.0mA I_C = -1mA, I_B = -0.1mA
Base-Emitter Impedance	r_{be}	—	-0.5	—	Ω	I_C = -10μA to -1mA
Emitter-Base Offset Voltage	V_{OS}	—	10	—	μV	V_{CB} = 0V, I_C = -1μA to -1mA
Change in Emitter-Base Offset Voltage vs. Collector-Base Voltage (CMRR)	$\Delta V_{OS/}$ ΔV_{CB}	—	10	—	μV	V_{CB} = 0V, I_C = -1μA to -1mA
Change in Emitter-Base Offset Voltage vs. Collector-Current	$\Delta V_{OS/}$ ΔI_C	—	5	—	μV	V_{CB} = 0V, I_C = -10μA to -1mA
Average Offset Voltage Drift	TC V_{OS}	—	0.5	—	μV/°C	I_C = -10μA to -1mA
Emitter-Base Offset Current	I_{OS}	—	8	—	nA	I_C = -10μA, V_{CB} = 0V
Change in Emitter-Base Offset Current vs. Collector-Base Voltage	$\Delta I_{OS/}$ ΔV_{CB}	—	30	—	nA	V_{CB} = 0 to -50V
Average Offset Current Drift	TC I_{OS}	—	50	—	pA/°C	I_C = -10μA
Collector-Collector Leakage Current	I_{CC}	—	35	—	pA	V_{CE} = -40V
SMALL SIGNAL CHARACTERISTICS						
Output Capacitance	C_{obo}		-4	15	pF	V_{CB} = -10V, f = 1.0MHz, I_E = 0
Input Capacitance	C_{ibo}	—	—	70	pF	V_{EB} = -0.5V, I_C = 0, f = 1MHz
Output Conductance	h_{OE}	—	10	—	μS	I_C = -1mA, V_{CE} = -5V
Current Gain-Bandwidth Product	f_T		170	—	MHz	V_{CE} = -12V, I_C = -2.0mA, f = 100MHz

Notes:
1. Valid provided that terminals are kept at ambient temperature.
2. Pulse test: Pulse width ≤ 300μs, duty cycle ≤ 2%.