

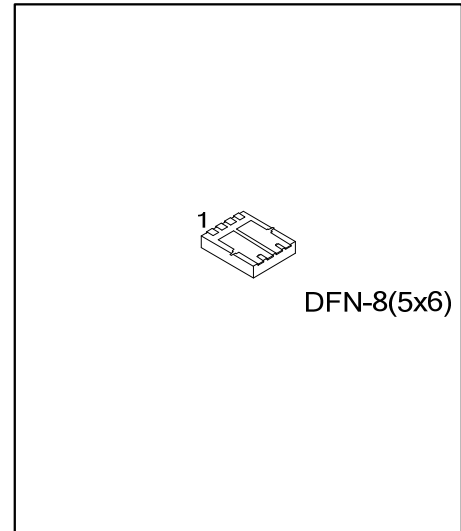


BD2378

Preliminary

DUAL TRANSISTOR

**COMPLEMENTARY NPN/PNP
SMALL SIGNAL SURFACE
MOUNT TRANSISTOR**



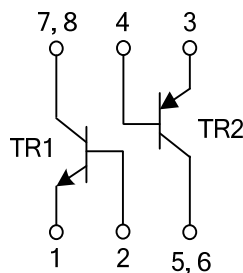
■ DESCRIPTION

The UTC **BD2378** is a complementary NPN/PNP small signal surface mount transistor. It's suitable for low power amplification and switch.

■ FEATURES

- * Epitaxial Planar Die Construction
- * Extremely-Small Surface Mount Package

■ EQUIVALENT CIRCUIT



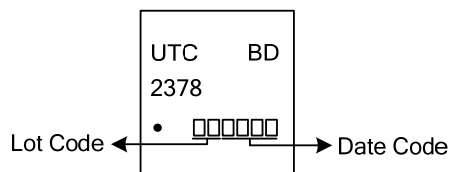
■ ORDERING INFORMATION

Ordering Number	Package									Packing
		1	2	3	4	5	6	7	8	
BD2378G-K08-5060-R	DFN-8(5x6)	E1	B1	E2	B2	C2	C2	C1	C1	Tape Reel

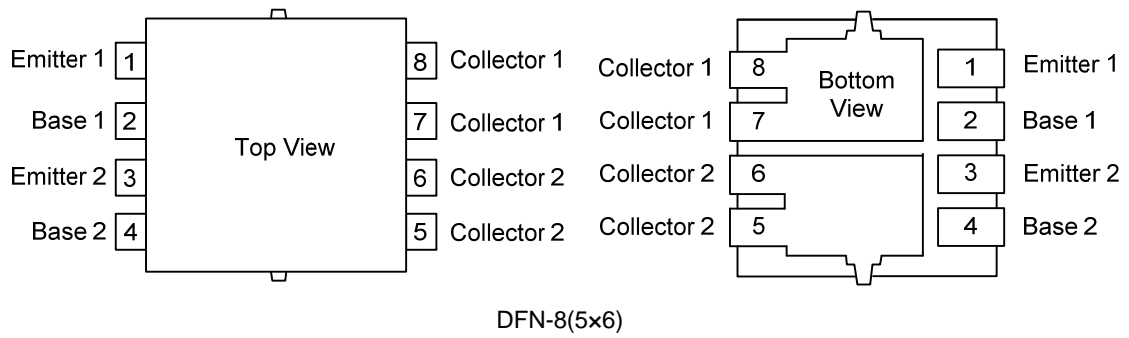
Note: Pin Assignment: E: Emitter B: Base C: Collector

<p>BD2378G-K08-5060-R</p> <p>(1) Packing Type (2) Package Type (3) Green Package</p>	<p>(1) R: Tape Reel (2) K08-5060: DFN-8(5x6) (3) G: Halogen Free and Lead Free</p>
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■ MARKING



■ PIN CONFIGURATION



■ ABSOLUTE MAXIMUM RATINGS ($T_A=25^\circ\text{C}$, unless otherwise specified.)

TR1

PARAMETER	SYMBOL	RATINGS	UNIT
Collector-Base Voltage	V_{CBO}	100	V
Collector-Emitter Voltage	V_{CEO}	80	V
Emitter-Base Voltage	V_{EBO}	5	V
Continuous Collector Current	I_C	2	A
Collector Dissipation	P_C	1.25	W
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-55~150	$^\circ\text{C}$

TR2

PARAMETER	SYMBOL	RATINGS	UNIT
Collector-Base Voltage	V_{CBO}	-100	V
Collector-Emitter Voltage	V_{CEO}	-80	V
Emitter-Base Voltage	V_{EBO}	-5	V
Collector Current	I_C	-2	A
Collector Power Dissipation	P_C	1.25	W
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55~150	$^\circ\text{C}$

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ ELECTRICAL CHARACTERISTICS ($T_A=25^\circ\text{C}$, unless otherwise specified.)

TR1

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	BV_{CBO}	$I_C=1\text{mA}, I_E=0$	100			V
Collector-Emitter Breakdown Voltage	BV_{CEO}	$I_C=100\text{mA}, I_B=0$	80			V
Emitter-Base Breakdown Voltage	BV_{EBO}	$I_E=1\text{mA}, I_C=0$	5			V
Collector Cut-Off Current	I_{CBO}	$V_{CB}=100\text{V}, I_E=0$			100	μA
Emitter Cut-Off Current	I_{EBO}	$V_{EB}=5\text{V}, I_C=0$			1	mA
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=1\text{A}, I_B=100\text{mA}$			0.6	V
DC Current Gain	$h_{FE(1)}$	$I_C=150\text{mA}, V_{CE}=2\text{V}$	40			
	$h_{FE(2)}$	$I_C=1\text{A}, V_{CE}=2\text{V}$	25			
Transition Frequency	f_T	$I_C=250\text{mA}, V_{CE}=10\text{V}, f=10\text{MHz}$	3			MHz

TR2

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=-1\text{mA}, I_E=0$	-100			V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=-100\text{mA}, I_B=0$	-80			V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_C=-1\text{mA}, I_E=0$	-5			V
Collector Cut-Off Current	I_{CBO}	$V_{CB}=-100\text{V}, I_E=0$			-100	μA
Emitter Cut-Off Current	I_{EBO}	$V_{EB}=-5\text{V}, I_C=0$			-1	mA
DC Current Gain	$h_{FE(1)}$	$V_{CE}=-2\text{V}, I_C=-150\text{mA}$	40			
	$h_{FE(2)}$	$V_{CE}=-2\text{V}, I_C=-1\text{A}$	25			
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=-1\text{A}, I_B=-100\text{mA}$			-0.6	V
Transition Frequency	f_T	$V_{CE}=-10\text{V}, I_C=-250\text{mA}, f=10\text{MHz}$	3			MHz

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