



BD2378

Preliminary

DUAL TRANSISTOR

COMPLEMENTARY NPN/PNP SMALL SIGNAL SURFACE MOUNT TRANSISTOR

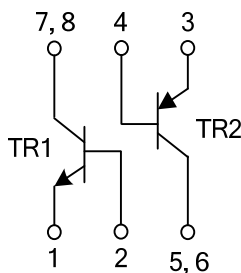
DESCRIPTION

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



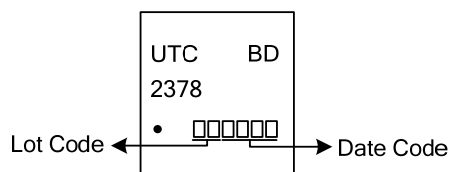
ORDERING INFORMATION

Ordering Number		Package	Pin Assignment								Packing
Lead Free	Halogen Free		1	2	3	4	5	6	7	8	
BD2378L-K08-5060-R	BD2378G-K08-5060-R	DFN5060-8	E1	B1	E2	B2	C2	C2	C1	C1	Tape Reel

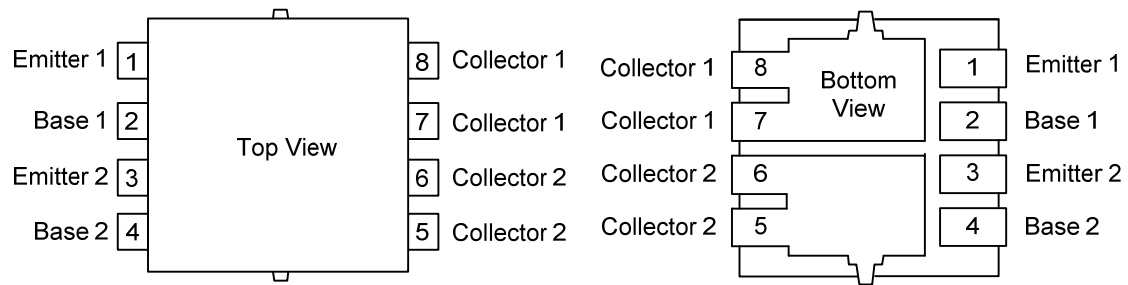
Note: Pin Assignment: G: Gate D: Drain S: Source

BD2378G-K08-5060-R		(1) Packing Type	(1) R: Tape Reel
		(2) Package Type	(2) K08-5060: DFN5060-8
		(3) Green Package	(3) G: Halogen Free and Lead Free, L: Lead Free

MARKING



■ PIN CONFIGURATION



DFN5060-8

■ 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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