RoHS COMPLIANT

Dual NPN+PNP Small Signal Transistor

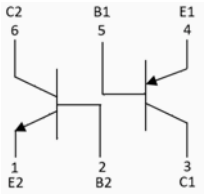
Features

- Epoxy meets UL-94 V-0 flammability rating
- Surface mount package ideally Suited for Automatic Insertion
- Moisture Sensitivity Level 1
- Part no. with suffix “Q” means AEC-Q101 qualified

Mechanical Data

- **Package:** SOT-363
- **Marking:** K27

Equivalent circuit



■ Ordering Information (Example)

MMDT2227Q	F2	Approximate 0.009g	3000	30000	120000	7ò reel

■TR1 PNP Pin3 4 5 Maximum Ratings (Ta=25 Unless otherwise specified

ITEM	SYMBOL	UNIT	CONDITIONS	VALUE
Collector-Base Voltage	V_{CBO}	V	I_C = -10μA, I_E = 0	-60
Collector-Emitter Voltage	V_{CEO}	V	I_C = -10mA, I_B = 0	-60
Emitter-Base Voltage	V_{EBO}	V	I_E = -10μA, I_C = 0	-5
Collector Current	I_C	mA		-600
Collector Power Dissipation (*)	P_C	mW		200
Thermal Resistance Junction to Ambient (*)	R_{thJA}	/W		625
Junction Temperature	T_j	ł	-55 to +150	-55 to +150
Storage Temperature	T_{stg}	ł		-55 to +150

■TR2 NPN Pin1 2 6 Maximum Ratings (Ta=25 Unless otherwise specified

ITEM	SYMBOL	UNIT	CONDITIONS	VALUE
Collector-Base Voltage	V_{CBO}	V	I_C = 10μA,I_E = 0	75
Collector-Emitter Voltage	V_{CEO}	V	I_C = 10mA,I_B = 0	40
Emitter-Base Voltage	V_{EBO}	V	I_E = 10μA,I_C = 0	6
Collector Current	I_C	mA		600
Collector Power Dissipation	P_C (*)	mW		200
Thermal Resistance Junction to Ambient	R_{thJA} (*)	/W		625

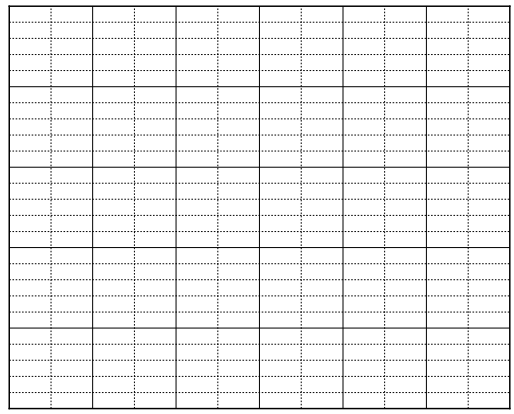
■**TR1 PNP Pin3 4 5 Electrical Characteristics** (Ta=25 unless otherwise specified)

ITEM	SYMBOL	UNIT	CONDITIONS	MIN.	TYP.	MAX.
Collector-base bq · 2 Ce n Û			₇ Co Ú			

■**TR2 NPN Pin1 2 6 Electrical Characteristics** (Ta=25 unless otherwise specified)

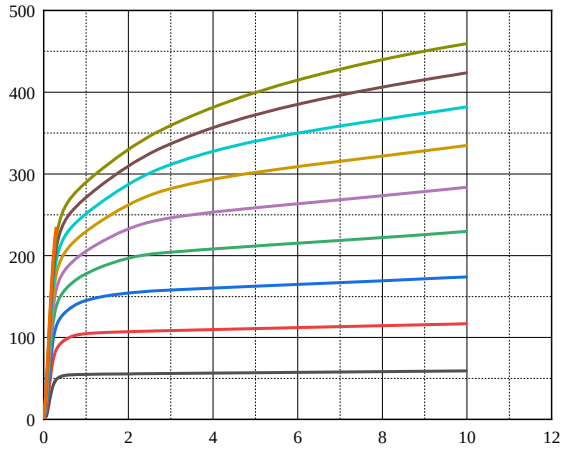
ITEM	SYMBOL	UNIT	CONDITIONS	MIN.	TYP.	MAX.
Collector-base breakdown voltage	V_{CBO}	V	I_C = 10μA,I_E = 0	75		
Collector-emitter breakdown voltage	V_{CEO}	V	I_C = 10mA,I_B = 0	40		
Emitter-base breakdown voltage	V_{EBO}	V	I_E = 10μA,I_C = 0	6		
Collector-Base cut-off current	I_{CBO}	nA	V_{CB} = 60V, I_E = 0			10
Collector cut-off current	I_{CEX}	nA	V_{CE} = 60V,$V_{EB(off)}$ = 3V			10
Emitter-Base Cut-off current	I_{EBO}	nA	V_{EB} = 3V, I_C = 0			10
Base cut-off Current	I_{BL}	nA	V_{CE} = 60V, $V_{EB(off)}$ = 3V			20
DC current gain	$h_{FE}1$		V_{CE} = 10V, I_C = 0.1mA	35		
	$h_{FE}2$		V_{CE} = 10V, I_C = 1mA	50		
	$h_{FE}3$		V_{CE} = 10V, I_C = 10mA	75		
	$h_{FE}4$		V_{CE} = 10V, I_C = 150mA	100		300
	$h_{FE}5$		V_{CE} = 1V, I_C = 150mA	35		
	$h_{FE}6$		V_{CE} = 10V, I_C = 500mA	40		
Collector-emitter saturation voltage	$V_{CE(sat)}$	V	I_C = 150mA, I_B = 15mA			0.3
			I_C = 500mA, I_B = 50mA			1
Baser-emitter saturation voltage	$V_{BE(sat)}$	V	I_C = 150mA, I_B = 15mA			1.2
			I_C = 500mA, I_B = 50mA			2
Transition frequency	f_T	MHz	V_{CE} = 20V, I_C = 20mA, f = 100MHz	300		
Delay time	td	ns	V_{CC} = 30V, I_C = 150mA, I_{B1} = 15mA, $V_{BE(off)}$ = -0.5V			10
Rise time	tr	ns				25
Storage time	ts	ns	V_{CC} = 30V, I_C = 150mA, I_{B1}=- I_{B2}=5mA			225
Fall time	tf	ns				60

■ **TR1 PNP Pin3 4 5 Characteristics** (Typical)

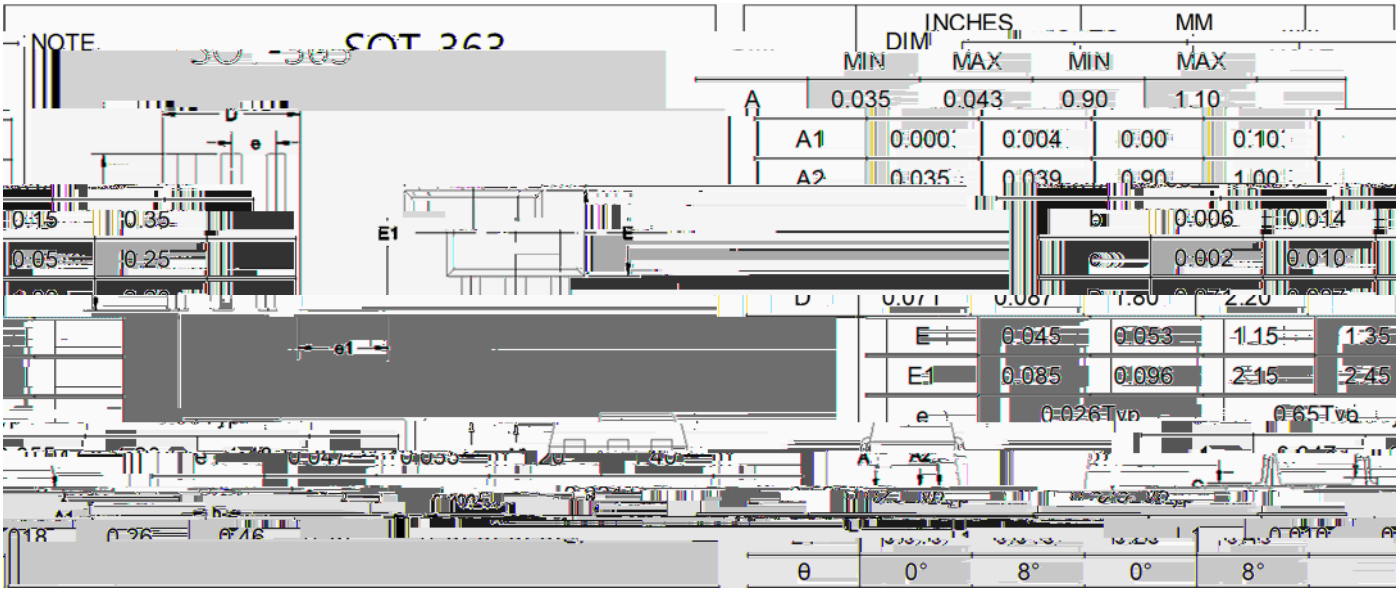


-0 -2 -4 -6 - - - - - - - - - - - - - -1 y 1

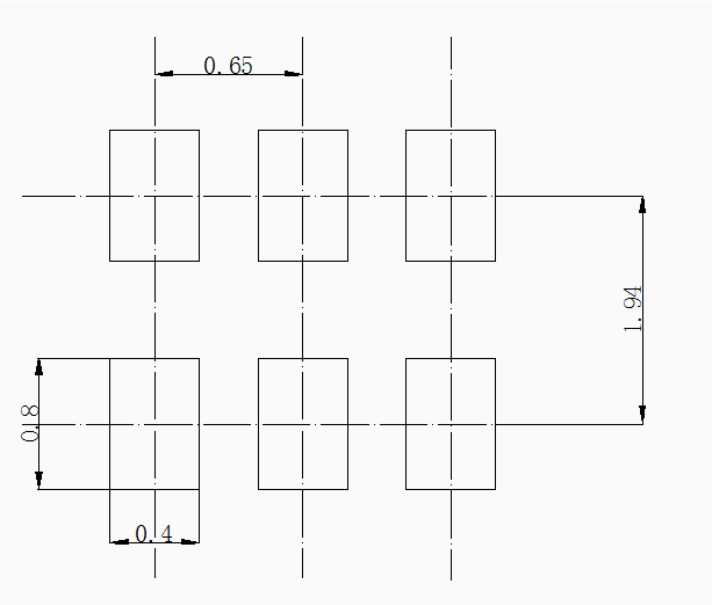
■ **TR2 NPN Pin1　2　6 Characteristics** (Typical)



■SOT-363 Package Outline Dimensions



■SOT-363 Soldering Footprint



Unit mm

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