RoHS COMPLIANT

Dual NPN+PNP Small Signal Transistor

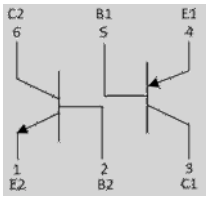
Features

- 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

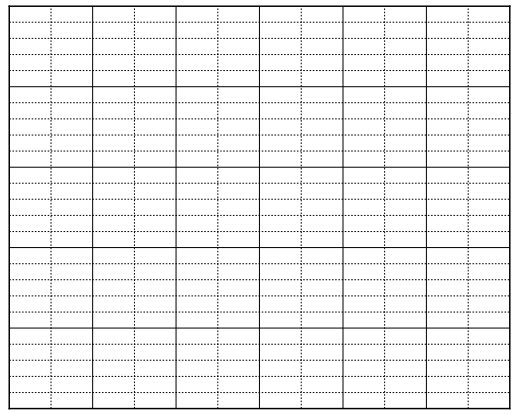
■**TR1 PNP Pin3 4 5 Electrical Characteristics** (Ta=25 unless otherwise specified)

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

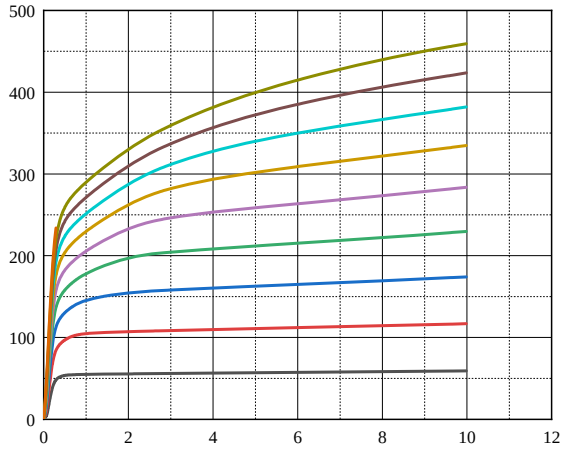
■TR2 NPN Pin1 2 6 Electrical Characteristics (Ta=25 unless otherwise specified)

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

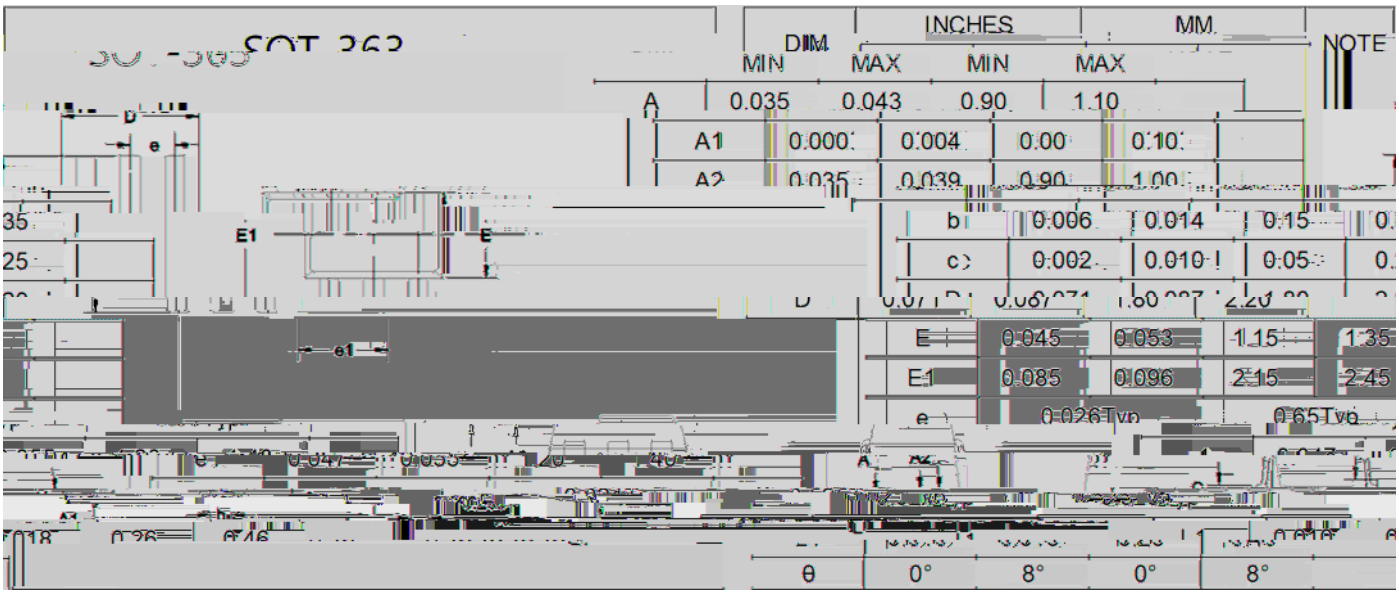
■ **TR1 PNP Pin3 4 5 Characteristics** (Typical)



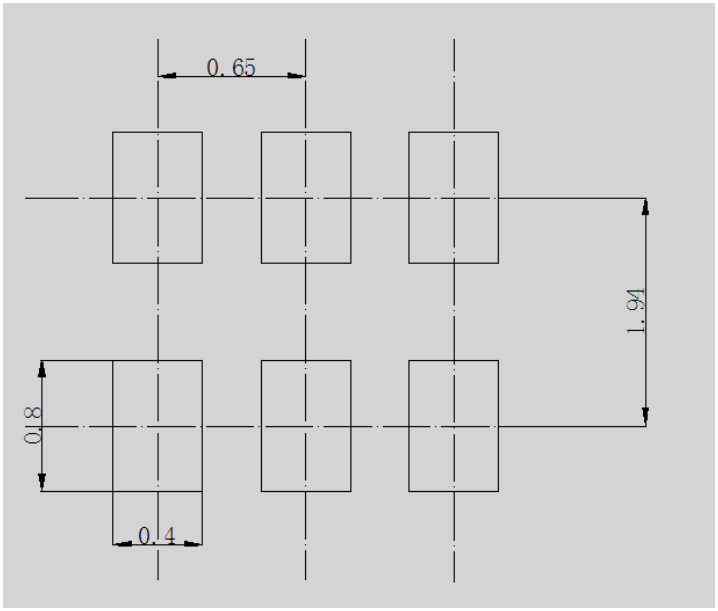
■ **TR2 NPN Pin1　2　6 Characteristics** (Typical)



■SOT-363 Package Outline Dimensions



■SOT-363 Soldering Footprint



Unit mm

Disclaimer

The information presented in this document is for reference only. Yangzhou Yangjie Electronic Technology Co., Ltd. reserves the right to make changes without notice for the specification of the products displayed herein to improve reliability, function or design or otherwise.

The product listed herein is designed to be used with automotive electronics are not designed for use in medical, life-saving, lifesustaining,or military,Yangjie or anyone on its behalf, assumes no responsibility or liability for any damages resulting from such improper use of sale.

This publication supersedes & replaces all information previously supplied. For additional information, please visit our website http:// www.21yangjie.com , or consult your nearest Yangjie's sales office for further assistance.