优尚

YOUSHANG SEMICONDUCTOR

设计研发新型功率器件

各类小信号开关

中低压及高压大电流等场效应管

0755-83047638
ysbdt@szyoushang.cn
www.szyoushang.cn

企业微信二维码

企业QQ二维码

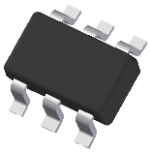
Features

- Epitaxial Planar Die Construction

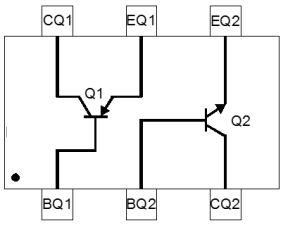
Mechanical Data

- Package: SOT363
- Package Material: Molded Plastic, “Green” Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminal Connections: See Schematic & Pin Configuration
- Terminals: Finish—Matte Tin Annealed over Alloy 42 Leadframe. Solderable per MIL-STD-202, Method 208 e3
- Weight: 0.016 grams (Approximate)

SOT363



Existing Product
Top View



Device Schematic

Maximum Ratings: Total Device (@ T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Operating and Storage Temperature Range	T_{OP}, T_{STG}	-55 to +150	°C

Thermal Characteristics: Total Device

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5)	P_D	200	mW
Thermal Resistance, Junction to Ambient Air (Note 5)	$R_{\Theta JA}$	625	°C/W

Maximum Ratings: Sub-Component Devices (@ T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Q1-PNP Transistor	Q2-NPN Transistor	Unit
Collector-Base Voltage	V_{CBO}	-60	80	V
Collector-Emitter Voltage	V_{CEO}	-60	65	V
Emitter-Base Voltage	V_{EBO}	-5.5	6	V
Collector Current - Continuous (Note 5)	I_C	-600	500	mA

Electrical Characteristics: PNP Transistor (Q1) (@ T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Max	Unit	Test Condition
OFF CHARACTERISTICS (Note 6)					
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	-60	—	V	I_C = -10μA, I_E = 0
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	-60	—	V	I_C = -10mA, I_B = 0
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	-5.5	—	V	I_E = -10μA, I_C = 0
Collector Cutoff Current	I_{CBO}	—	-10	nA	V_{CB} = -50V, I_E = 0
Collector Cutoff Current	I_{CEX}	—	-50	nA	V_{CE} = -30V, $V_{EB(OFF)}$ = 0.5V
Base Cutoff Current	I_{BL}	—	-50	nA	V_{CE} = -30V, $V_{EB(OFF)}$ = -0.5V
ON CHARACTERISTICS (Note 6)					
DC Current Gain	h_{FE}	100 100 100 100 50	— — — 300 —	— — — — —	I_C = -100μA, V_{CE} = -10V I_C = -1.0mA, V_{CE} = -10V I_C = -10mA, V_{CE} = -10V I_C = -150mA, V_{CE} = -10V I_C = -500mA, V_{CE} = -10V
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	—	-0.3 -0.5	V	I_C = -150mA, I_B = -15mA I_C = -500mA, I_B = -50mA
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	—	-0.95 -1.3	V	I_C = -150mA, I_B = -15mA I_C = -500mA, I_B = -50mA

Notes: 5. Device mounted on FR-4 substrate printed circuit board with 1 inch square 2oz copper pad area.
6. Short duration pulse test used to minimize self-heating effect.

Electrical Characteristics: NPN Transistor (Q2) (@ T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
OFF CHARACTERISTICS (Note 6)						
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	80	—	—	V	I_C = 100μA, I_E = 0
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	65	—	—	V	I_C = 1mA, I_B = 0
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	6	—	—	V	I_E = 100μA, I_C = 0
Collector-Base Cutoff Current	I_{CBO}	—	—	100	nA	V_{CB} = 80V, I_E = 0
Collector Cutoff Current	I_{CES}	—	—	100	nA	V_{CE} = 90V, V_{BE} = 0
Emitter-Base Cutoff Current	I_{EBO}	—	—	100	nA	V_{EB} = 5V, I_C = 0
ON CHARACTERISTICS (Note 6)						
DC Current Gain	h_{FE}	250	—	—	—	V_{CE} = 1V, I_C = 10mA
		100	—	—	—	V_{CE} = 1V, I_C = 100mA
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	—	0.2	0.4	V	I_C = 100mA, I_B = 10mA
Base-Emitter Turn-on Voltage	$V_{BE(on)}$	0.7	0.75	0.8	V	V_{CE} = 1V, I_C = 100mA
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	—	—	0.95	V	I_C = 100mA, I_B = 5mA

Note: 6. Short duration pulse test used to minimize self-heating effect.

Typical Characteristics (@ T_A = +25°C, unless otherwise specified.)

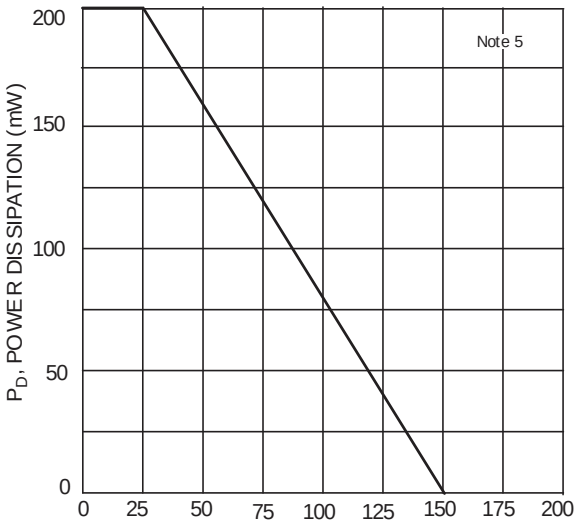


Fig. 1 Power Derating Curve

PNP Transistor (Q1) Plots

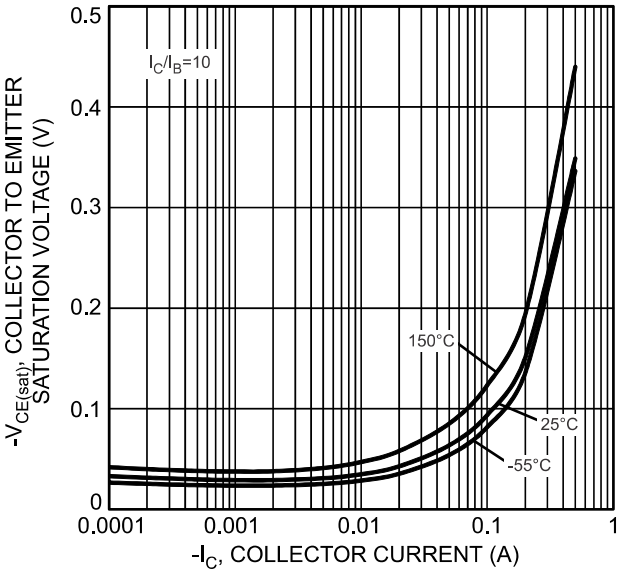


Fig 2. Collector Emitter Saturation Voltage vs. Collector Current

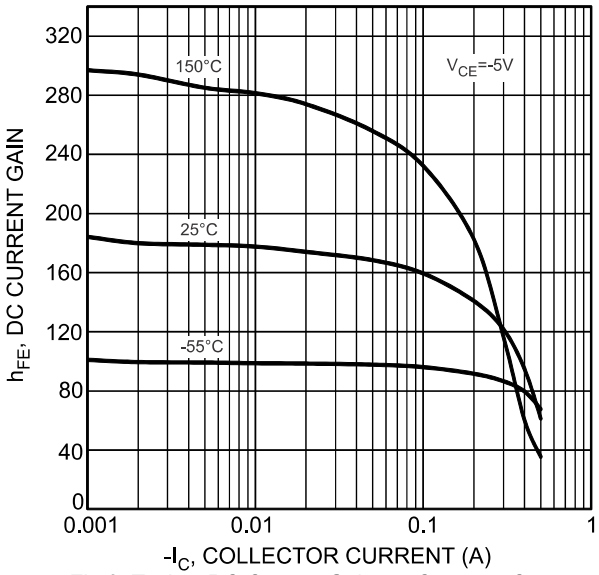


Fig 3. Typical DC Current Gain vs. Collector Current

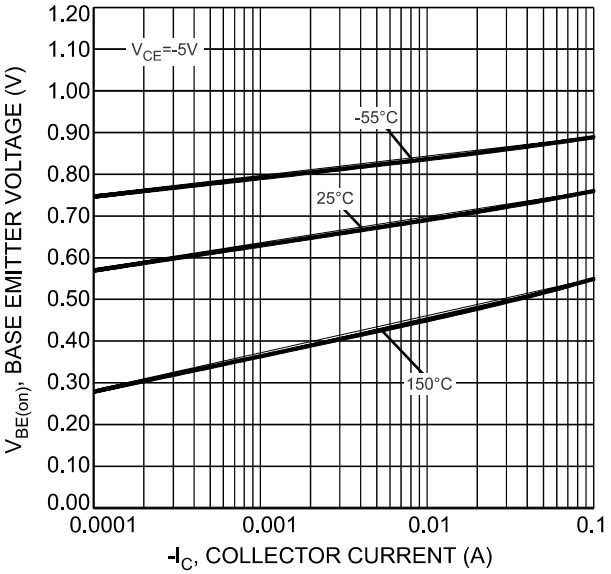


Fig. 4 Typical Base Emitter Voltage vs. Collector Current

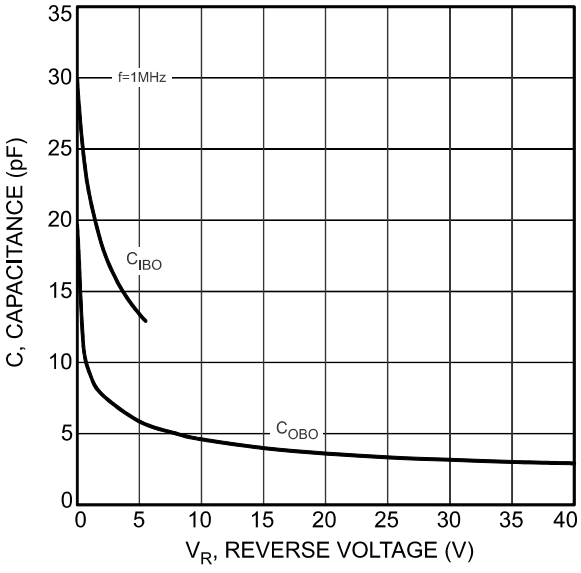


Fig. 5 Typical Capacitance

NPN Transistor (Q2) Plots

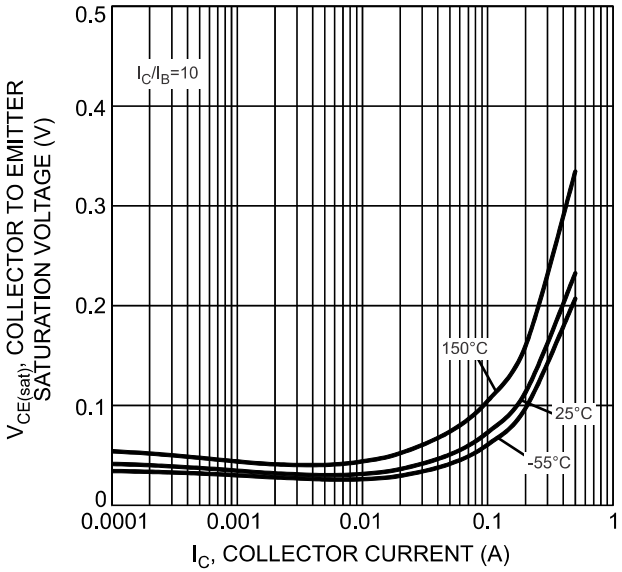


Fig. 6 Typical Collector Emitter Saturation Voltage vs. Collector Current

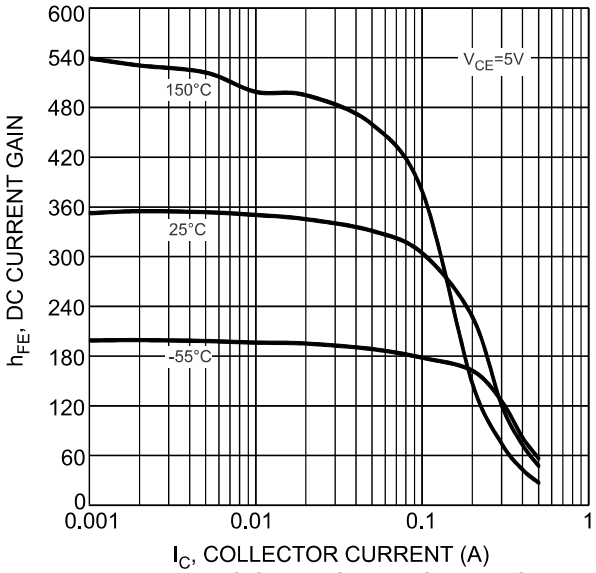


Fig. 7 Typical DC Current Gain vs. Collector Current

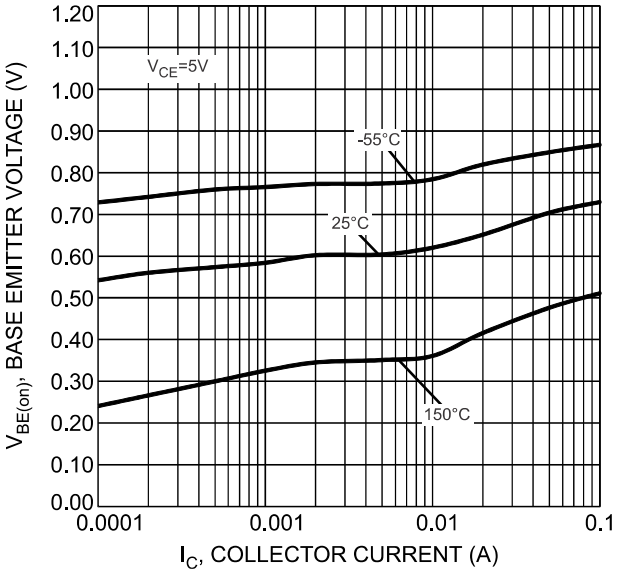


Fig 8. Typical Base Emitter Voltage vs Collector Current

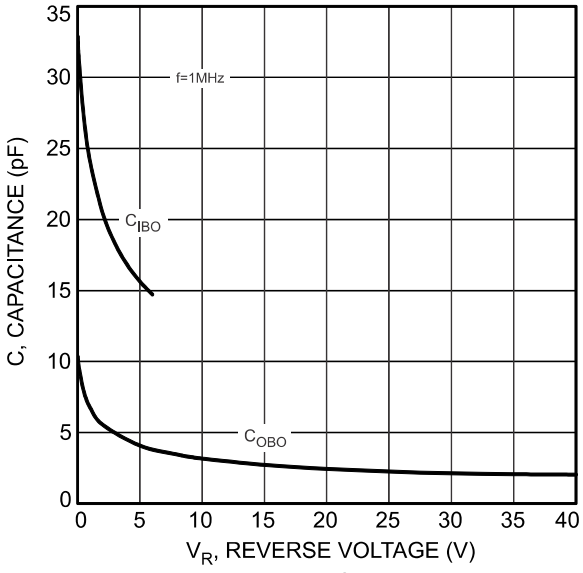
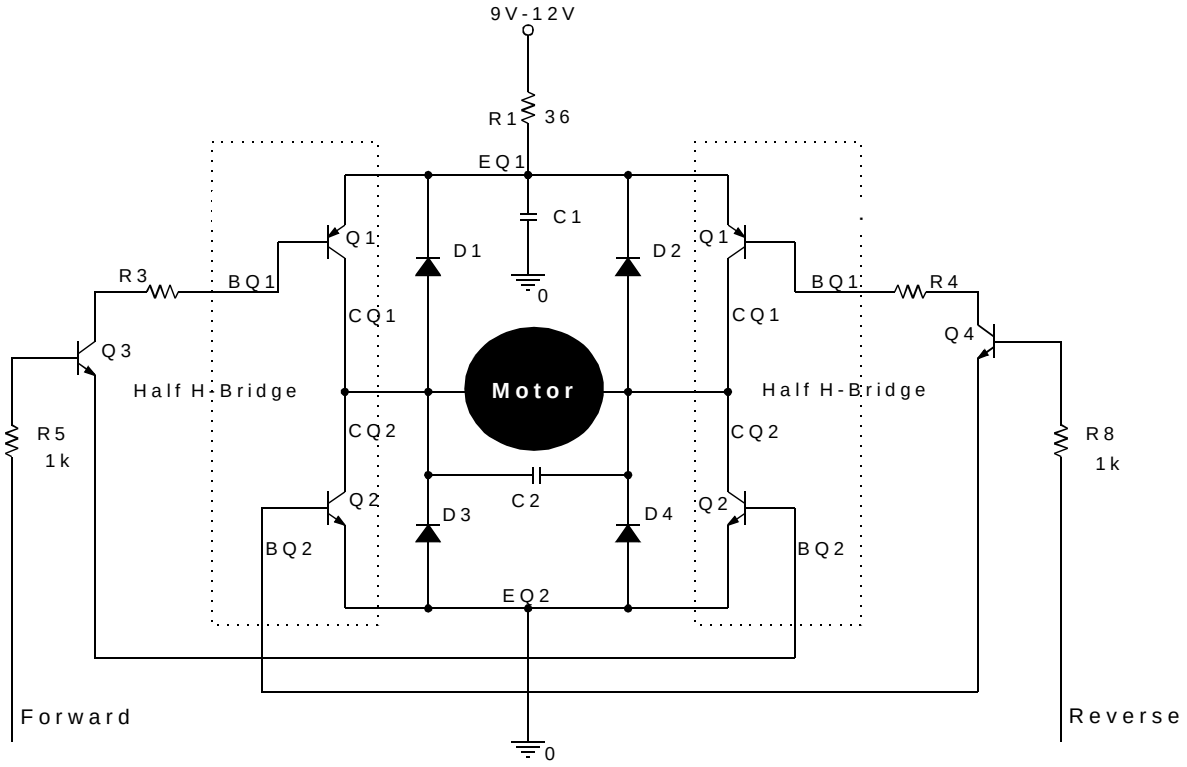


Fig. 9 Typical Capacitance

Current Schematic with Application Example

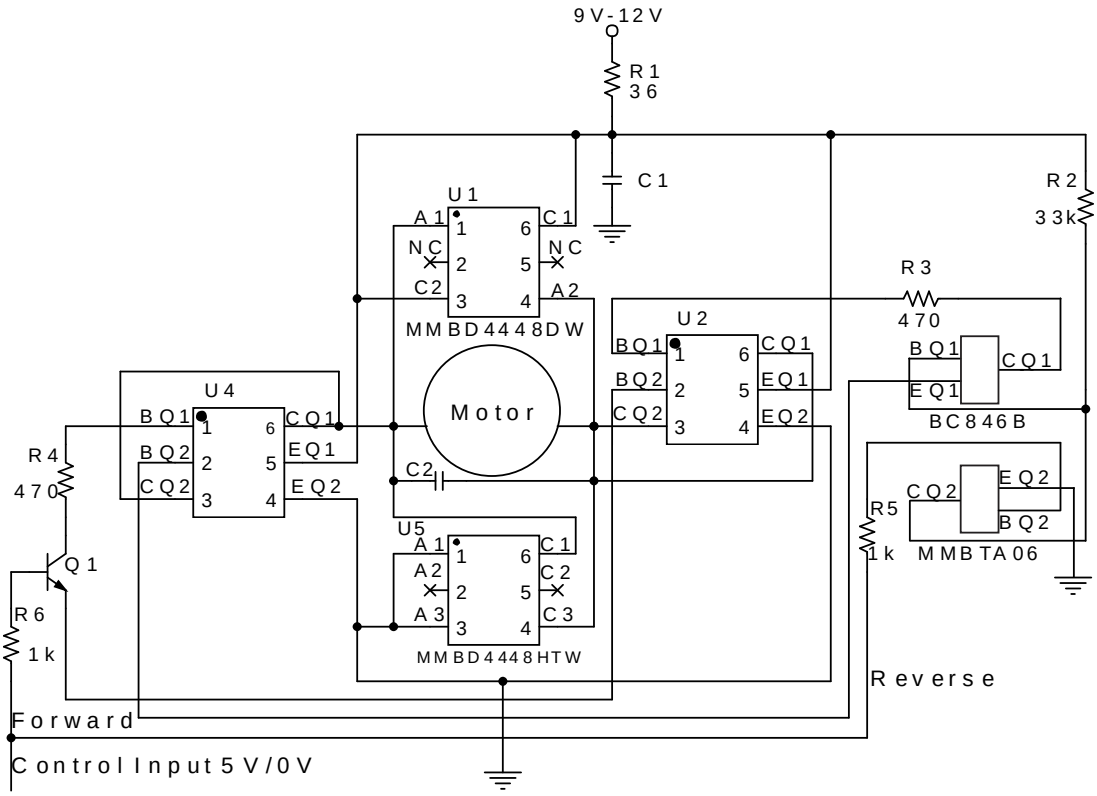
SOT363



Notes: D1, D2, D3, D4: Switching Diodes (MMBD4448)
Q3, Q4: NPN Transistors (MMBTA06)

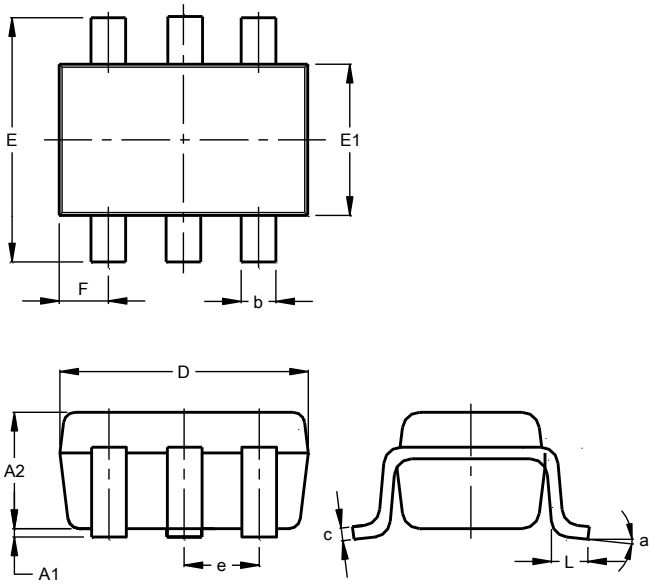
Application Example Schematic (with Package Pinouts)

SOT363



Package Outline Dimensions

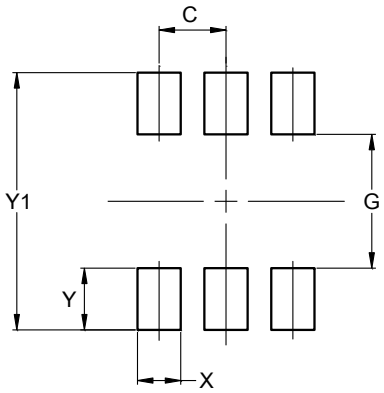
SOT363



SOT363			
Dim	**Min**	**Max**	**Typ**
A1	0.00	0.10	0.05
A2	0.90	1.00	0.95
b	0.10	0.30	0.25
c	0.10	0.22	0.11
D	1.80	2.20	2.15
E	2.00	2.20	2.10
E1	1.15	1.35	1.30
e	0.650 BSC		
F	0.40	0.45	0.425
L	0.25	0.40	0.30
a	0°	8°	--
All Dimensions in mm			

Suggested Pad Layout

SOT363



Dimensions	Value (in mm)
C	0.650
G	1.300
X	0.420
Y	0.600
Y1	2.500