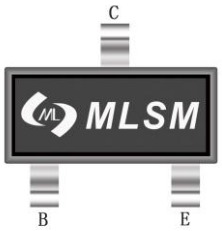
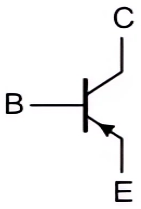
Features

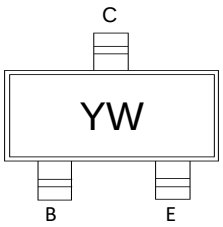
- High Voltage Application
- Telephone Application
- Complementary to MMBTA43



SOT-23 top view



Schematic diagram



Marking and pin assignment

Pb-Free RoHS Halogen-Free

Maximum Ratings (Ta=25℃ unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	-200	V
V_{CEO}	Collector-Emitter Voltage	-200	V
V_{EBO}	Emitter-Base Voltage	-5	V
I_c	Collector Current	-500	mA
P_C	Collector Power Dissipation	350	mW
$R_{\theta JA}$	Thermal Resistance Junction to Ambient	357	℃/W
T_J , T_{STG}	Operating and Storage Temperature Range	-55~ +150	℃

Electrical Characteristics (Ta=25℃ unless otherwise specified)

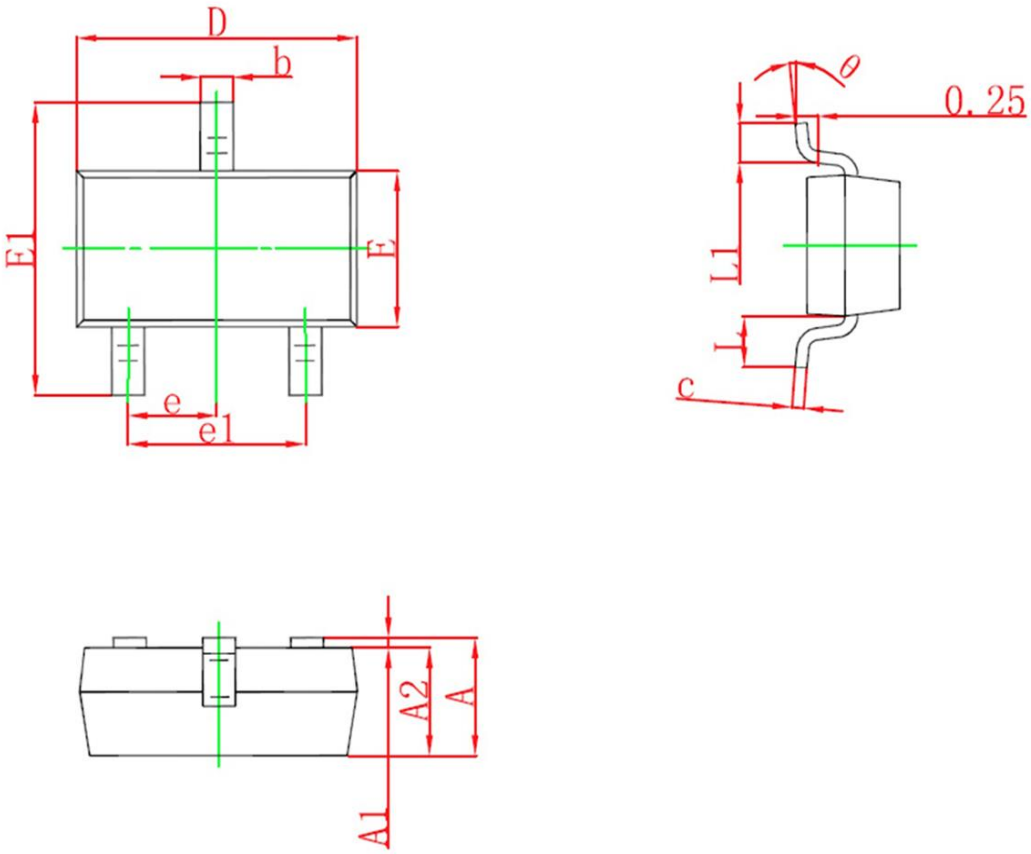
Symbol	Parameter	Test conditions	Min	Typ	Max	Unit
$V_{(BR)CBO}$	Collector-base breakdown voltage	I_C=-100μA,I_E=0	-200	--	--	V
$V_{(BR)CEO}$	Collector-emitter breakdown voltage	I_C=-1mA,I_B=0	-200	--	--	V
$V_{(BR)EBO}$	Emitter-base breakdown voltage	I_E=-100μA,I_C=0	-5	--	--	V
I_{CBO}	Collector cut-off current	V_{CB}=-200V,I_E=0	--	--	-0.25	μA
I_{CEO}	Collector cut-off current	V_{CE}=-200V,I_B=0	--	--	-0.25	μA
I_{EBO}	Emitter cut-off current	V_{EB}=-5V,I_C=0	--	--	-0.1	μA
h_{FE1} *	DC current gain	V_{CE}=-10V,I_C=-10mA	40	--	--	
h_{FE2} *		V_{CE}=-10V,I_C=-1mA	25	--	--	
h_{FE3} *		V_{CE}=-10V,I_C=-30m A	25	--	--	
$V_{CE(sat)}$*	Collector-emitter saturation voltage	I_C=-20mA ,I_B=-2mA	--	--	-0.5	V
$V_{BE(sat)}$*	Base -emitter saturation voltage	I_C=-20mA ,I_B=-2mA	--	--	-0.9	V
f_T	Transition frequency	V_{CE}=-20V,I_c=-10mA,f=100MHz	50	--	--	MHz
C_{ob}	Collector output capacitance	V_{CB}=-20V, I_E=0,f=1MHZ	--	--	8	pF

*Pulse test: pulse width ≤300μs, duty cycle≤ 2.0%

Ordering Information (Example)

Type	Package	Marking	Minimum Package(pcs)	Inner Box Quantity(pcs)	Outer Carton Quantity(pcs)	Delivery Mode
MMBTA93	SOT-23	YW	3,000	45,000	180,000	7"reel

SOT-23 Package information



Symbol	Dimensions in Millimeters(mm)		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E1	2.250	2.550	0.088	0.100
E	1.200	1.400	0.047	0.055
e	0.950TYP		0.037TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°