Micro Commercial Components

Date: Mar 15, 2022

PCN No#: 031522-1

PCN Title: Additional new wafer source for Medium Power Bipolar Transistors

Dear Customer:

This is an announcement of change(s) to products that are currently being offered by Micro Commercial Components Corp(MCC) .We request that you acknowledge receipt of this notification within 30 days of the date of this PCN. Please refer to the implementation date of this change as it is stated in the attached PCN form. Please contact your local sales representative to acknowledge receipt of this PCN.

If you have any questions about PCN's products, please contact your local sales representative.

Sincerely,

MCC PCN Team

Micro Commercial Components

PRODUCT CHANGE NOTICE

Notification Date	Implementation Date	Change Type	Classification	PCN No
Mar 15, 2022	ASAP	Add new wafer source	Major	031522-1

TITLE

Additional new wafer source for Medium Power Bipolar Transistors

DESCRIPTION OF CHANGE

To solve our delivery issue of some medium power bipolar transistors, MCC has determined to add a new wafer source. Internal qualification process had been finished and the result showed that the parts with new wafer exactly met our specification.

IMPACT

No change in datasheet electrical parameters .
Table A: Electrical Characteristics Comparison.

PRODUCTS AFFECTED

2SB1184-Q-BP , TIP31C-BP and MJD31C-TP

WEB LINKS

Terms And Conditions:	https://www.mccsemi.com/Home/TermsAndConditions
For More Information Contact:	https://www.mccsemi.com/Contact/Index
Products:	https://www.mccsemi.com/ProductCategories

DISCLAIMER

Unless a MCC Sales representative is contacted in writing within 30 days of the posting of this notice, all changes described in this announcement are considered approved.

Table A - Electrical Characteristics Comparison			
2SB1184-Q-BP			
Spec	Conditions	Typical Value	
		Old	New
$V_{(BR)CBO}$>-65V	I_C=-50μA, I_E=0	-167V	-180V
$V_{(BR)CEO}$>-50V	I_C=-1mA, I_B=0	-88V	-121V
$V_{(BR)EBO}$>-5V	I_E=-50μA, I_C=0	-16V	-12V
I_{CBO}<-1μA	V_{CB}=-40V, I_E=0	0μA	0μA
I_{EBO}<-1μA	V_{EB}=-4V, I_C=0	0μA	0μA
120<h_{FE}<270	V_{CE}=-3V, I_C=-0.5A	135	177
$V_{CE(sat)}$<-1V	I_C=-2A, I_B=-200mA	-0.2V	-0.145V
TIP31C-BP & MJD31C-TP			
Spec	Conditions	Typical Value	
		Old	New
$V_{(BR)CBO}$>100V	I_C=1mA, I_E=0	313V	345V
$V_{(BR)CEO}$>100V	I_C=30mA, I_B=0	149V	164V
$V_{(BR)EBO}$>5V	I_E=1mA, I_C=0	9.5V	9.5V
I_{CEO}<300μA	V_{CE}=60V, I_E=0	0μA	0μA
I_{EBO}<1mA	V_{EB}=5V, I_C=0	0mA	0mA
h_{FE}>25	V_{CE}=4V, I_C=1A	78	62
10<h_{FE}<75	V_{CE}=4V, I_C=3A	60	46
$V_{CE(sat)}$<1.2V	I_C=3A, I_B=375mA	0.187V	0.183V
V_{BE}<1.8V	V_{CE}=4V, I_C=3A	0.93V	0.99V

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Reliability Report

Part Number: 2SB1184-Q-BP

Date: 2022-02-15

Test Results

Test Item	Conditions	Duration	Quantity	Rejects
TEST Pre- and Post-Stress Electrical Test	T_a = 25 °C	N/A	all parts	see below
PC Preconditioning	JESD22A-113 Bake T_a = 125 °C Soak T_a = 85 °C, RH = 85% Reflow soldering	24 hours 168 hours 3 cycles	308Pcs	0
HTRB High Temperature Reverse Bias	JESD22-A108 $T_j = T_{jmax}$, V_R > 80% V_{CEO}	1000 hours	77Pcs	0
TC Temperature Cycling	JESD22-A104 -55 °C to 150℃	1000 cycles	77Pcs	0
AC Autoclave	JESD22-A102 T_a = 121 °C, RH = 100 % Pressure = 2atm	96 hours	77Pcs	0
H3TRB High Humidity High Temperature Reverse Bias	JESD22-A101 T_a = 85 °C, RH = 85%,V_R > 80 % V_{CEO}	1000 hours	77Pcs	0
IOL Intermittent Operating Life	MIL-STD-750 Method 1037 $t_{on} = t_{off}$, devices powered to insure ΔT_j = 100 °C for 15000 cycles	1000 hours	77Pcs	0
ESD **Human Body Model**	JESD22-A114 2 KV	N/A	30Pcs	0
RSH Resistance to Solder Heat	JESD22-A111 / JESD22-B106 260 °C ± 5 °C	10 s	30Pcs	0
SD Solderability	J-STD-002 245 °C ± 5 °C	3 s	10Pcs	0
LTSL Low Temperature Storage Life	JESD22-A119 Ta≤-55℃	1000 hours	32Pcs	0
HTSL High Temperature Storage Life	JESD22-A103 T_a≥150℃	1000 hours	77Pcs	0

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Reliability Report

Part Number: TIP31C-BP

Date: 2022-02-24

Test Results

Test Item	Conditions	Duration	Quantity	Rejects
TEST Pre- and Post-Stress Electrical Test	T_a = 25 °C	N/A	all parts	see below
PC Preconditioning	JESD22A-113 Bake T_a = 125 °C Soak T_a = 85 °C, RH = 85% Reflow soldering	24 hours 168 hours 3 cycles	308Pcs	0
HTRB High Temperature Reverse Bias	JESD22-A108 $T_j = T_{jmax}$, V_R > 80% V_{CEO}	1000 hours	77Pcs	0
TC Temperature Cycling	JESD22-A104 -55 °C to 150℃	1000 cycles	77Pcs	0
AC Autoclave	JESD22-A102 T_a = 121 °C, RH = 100 % Pressure = 2atm	96 hours	77Pcs	0
H3TRB High Humidity High Temperature Reverse Bias	JESD22-A101 T_a = 85 °C, RH = 85%,V_R > 80 % V_{CEO}	1000 hours	77Pcs	0
IOL Intermittent Operating Life	MIL-STD-750 Method 1037 $t_{on} = t_{off}$, devices powered to insure ΔT_j = 100 °C for 15000 cycles	1000 hours	77Pcs	0
ESD **Human Body Model**	JESD22-A114 2 KV	N/A	30Pcs	0
RSH Resistance to Solder Heat	JESD22-A111 / JESD22-B106 260 °C ± 5 °C	10 s	30Pcs	0
SD Solderability	J-STD-002 245 °C ± 5 °C	3 s	10Pcs	0
LTSL Low Temperature Storage Life	JESD22-A119 Ta≤-55℃	1000 hours	32Pcs	0
HTSL High Temperature Storage Life	JESD22-A103 T_a≥150℃	1000 hours	77Pcs	0