



FINAL PRODUCT/PROCESS CHANGE NOTIFICATION #16827

Generic Copy

Issue Date: 09-Mar-2012

TITLE: Package change from TO-218 to TO-247 for all Bipolar Power Transistors

PROPOSED FIRST SHIP DATE: 09-Jun-2012

FOR ANY QUESTIONS CONCERNING THIS NOTIFICATION:

Contact your local ON Semiconductor Sales Office or
Farrah Awang Omar<Farrah.Omar@onsemi.com>

SAMPLES: Contact your local ON Semiconductor Sales Office

ADDITIONAL RELIABILITY DATA: Available

Contact your local ON Semiconductor Sales Office or Laura Rivers<laura.rivers@onsemi.com>

NOTIFICATION TYPE:

Final Product/Process Change Notification (FPCN)

Final change notification sent to customers. FPCNs are issued at least 90 days prior to implementation of the change.

ON Semiconductor will consider this change approved unless specific conditions of acceptance are provided in writing within 30 days of receipt of this notice. To do so, contact <quality@onsemi.com>.

DESCRIPTION AND PURPOSE:

This FPCN announces the package change of all TO-218 Bipolar Power Transistors currently built at PSI Manila facility, to package TO-247 manufactured at Nantong-Fujitsu in China facility. The TO-247 package will improve device performance and is mechanically compatible with TO-218. On next pages we show Case Outline drawings of both TO-218 and TO-247 packages. The devices in TO-247 package will guarantee the same electrical parametric distribution.

Nantong Fujitsu facility is currently used to manufacture ON's TO-220AB, TO220AC, I2PAK & DPAK devices and is ISO/TS 16949:2002 certified.



FINAL PRODUCT/PROCESS CHANGE NOTIFICATION # 16827

RELIABILITY DATA SUMMARY:

Package: TO-247

Qual Vehicles: MJW21195G, MJW21196G, TIP35CG, TIP36CG, BU323ZG

MJW21195G

Test:	Conditions:	Interval:	Results
Autoclave+PC	Ta=121C RH=100% ~15 psig	96 hrs	0/77
H3TRB+PC	Ta=85C RH=85% bias=80% rated V or100V Max	1008 hrs	0/77
IOL+PC	Ta=25C, Delta TJ = 100 C, Ton/off = 3.5 min.	8572 cyc	0/77
TC+PC	Ta= -65 C to 150 C	1000 cyc	0/77
RSH	Ta=260C, 10 sec dwell		0/30

MJW21196G

Test:	Conditions:	Interval:	Results
Autoclave+PC	Ta=121C RH=100% ~15 psig	96 hrs	0/77
H3TRB+PC	Ta=85C RH=85% bias=80% rated V or100V Max	1008 hrs	0/77
IOL+PC	Ta=25C, Delta TJ = 100 C, Ton/off = 3.5 min.	8572 cyc	0/77
TC+PC	Ta= -65 C to 150 C	1000 cyc	0/77
RSH	Ta=260C, 10 sec dwell		0/30

TIP35CG

Test:	Conditions:	Interval:	Results
Autoclave+PC	Ta=121C RH=100% ~15 psig	96 hrs	0/77
H3TRB+PC	Ta=85C RH=85% bias=80% rated V or100V Max	1008 hrs	0/77

TIP36CG

Test:	Conditions:	Interval:	Results
Autoclave+PC	Ta=121C RH=100% ~15 psig	96 hrs	0/77
TC+PC	Ta= -65 C to 150 C	1000 cyc	0/77

BU323ZG

Test:	Conditions:	Interval:	Results
Autoclave+PC	Ta=121C RH=100% ~15 psig	96 hrs	0/77
H3TRB+PC	Ta=85C RH=85% bias=80% rated V or100V Max	1008 hrs	0/77



FINAL PRODUCT/PROCESS CHANGE NOTIFICATION # 16827

ELECTRICAL CHARACTERISTIC SUMMARY:

There are no changes in electrical characteristics; and product performance meets data sheet specifications. Characterization data is available upon request.

CHANGED PART IDENTIFICATION:

Product from Nantong-Fujitsu will be identified by NF site code marking.

List of affected General Parts:

BDV64BG
BDV65BG
BU323ZG
MJE4343G
MJH11017G
MJH11019G
MJH11020G
MJH11021G
MJH11022G
MJH6284G
MJH6287G
TIP140G
TIP141G
TIP142G
TIP147G
TIP2955G
TIP3055G
TIP33CG
TIP35AG
TIP35CG
TIP36AG
TIP36CG



FINAL PRODUCT/PROCESS CHANGE NOTIFICATION # 16827

Case Outline Drawings:

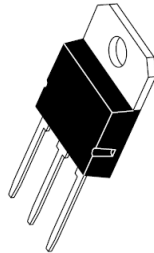
MECHANICAL CASE OUTLINE
PACKAGE DIMENSIONS

ON Semiconductor

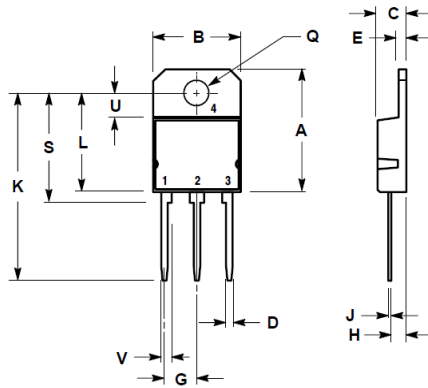


SOT-93 (TO-218)
CASE 340D-02
ISSUE E

DATE 01/03/2002



SCALE 1:1



STYLE 1:
PIN 1. BASE
2. COLLECTOR
3. EMITTER
4. COLLECTOR

STYLE 2:
PIN 1. ANODE
2. CATHODE
3. ANODE
4. CATHODE

NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETER.

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	---	20.35	---	0.801
B	14.70	15.20	0.579	0.598
C	4.70	4.90	0.185	0.193
D	1.10	1.30	0.043	0.051
E	1.17	1.37	0.046	0.054
G	5.40	5.55	0.213	0.219
H	2.00	3.00	0.079	0.118
J	0.50	0.78	0.020	0.031
K	31.00 REF	---	1.220 REF	---
L	---	16.20	---	0.638
Q	4.00	4.10	0.158	0.161
S	17.80	18.20	0.701	0.717
U	4.00 REF	---	0.157 REF	---
V	1.75 REF	---	0.069	---

MARKING DIAGRAM



A = Assembly Location
Y = Year
WW = Work Week
xxxxx = Device Code



TO-218 Case Outline

CRITICAL DIMENSIONS, TO-218 vs TO-247:

- Dimension "G" = 5.40 to 5.45 mm (TO-218), 5.45 mm BSC (TO-247)
- Dimension "Q" = 4.0 to 4.10 mm (TO-218), 3.55 to 3.65 mm (TO-247)
- Dimension "S" = 17.80 to 18.20 mm (TO-218), 19.46 mm (TO-247)
- Dimension "B" = 14.7 to 15.2 mm (TO-218), 15.75 to 16.26 mm (TO-247)
- Dimension "A" = 20.35 mm max (TO-218), 20.32 to 21.08 mm (TO-247)



FINAL PRODUCT/PROCESS CHANGE NOTIFICATION # 16827

Case Outline Drawings:

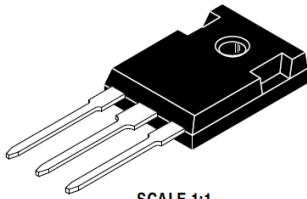
MECHANICAL CASE OUTLINE
PACKAGE DIMENSIONS

ON Semiconductor®

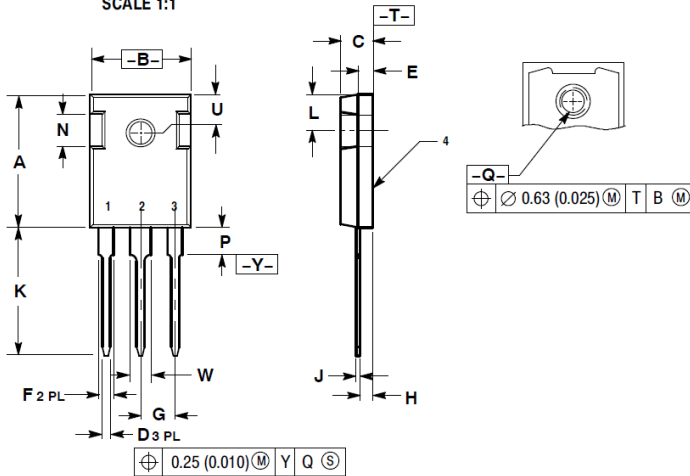


TO-247
CASE 340L-02
ISSUE F

DATE 26 OCT 2011



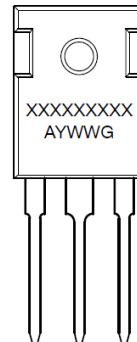
SCALE 1:1



- NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETER.

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	20.32	21.08	0.800	0.830
B	15.75	16.26	0.620	0.640
C	4.70	5.30	0.185	0.209
D	1.00	1.40	0.040	0.055
E	1.90	2.60	0.075	0.102
F	1.65	2.13	0.065	0.084
G	5.45 BSC		0.215 BSC	
H	1.50	2.49	0.059	0.098
J	0.40	0.80	0.016	0.031
K	19.81	20.83	0.780	0.820
L	5.40	6.20	0.212	0.244
N	4.32	5.49	0.170	0.216
P	---	4.50	---	0.177
Q	3.55	3.65	0.140	0.144
U	6.15 BSC		0.242 BSC	
W	2.87	3.12	0.113	0.123

GENERIC MARKING DIAGRAM*



- XXXXXX = Specific Device Code
A = Assembly Location
Y = Year
WW = Work Week
G = Pb-Free Package

- STYLE 1:
PIN 1. GATE
2. DRAIN
3. SOURCE
4. DRAIN
- STYLE 2:
PIN 1. ANODE
2. CATHODE (S)
3. ANODE 2
4. CATHODES (S)
- STYLE 3:
PIN 1. BASE
2. COLLECTOR
3. EMITTER
4. COLLECTOR
- STYLE 4:
PIN 1. GATE
2. COLLECTOR
3. EMITTER
4. COLLECTOR
- STYLE 5:
PIN 1. CATHODE
2. ANODE
3. GATE
4. ANODE
- STYLE 6:
PIN 1. MAIN TERMINAL 1
2. MAIN TERMINAL 2
3. GATE
4. MAIN TERMINAL 2



TO-247 Case Outline