MJW21191G Datasheet

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DiGi Electronics Part Number	MJW21191G-DG
Manufacturer	onsemi
Manufacturer Product Number	MJW21191G
Description	TRANS PNP 150V 8A TO247-3
Detailed Description	Bipolar (BJT) Transistor PNP 150 V 8 A 4MHz 125 W Through Hole TO-247-3

Tel: +00 852-30501935

RFQ Email: Info@DiGi-Electronics.com

Purchase and inquiry

Manufacturer Product Number:	Manufacturer:
MJW21191G	onsemi
Series:	Product Status:
-	Obsolete
Transistor Type:	Current - Collector (Ic) (Max):
PNP	8 A
Voltage - Collector Emitter Breakdown (Max):	Vce Saturation (Max) @ Ib, Ic:
150 V	2V @ 1.6A, 8A
Current - Collector Cutoff (Max):	DC Current Gain (hFE) (Min) @ Ic, Vce:
10µA	15 @ 4A, 2V
Power - Max:	Frequency - Transition:
125 W	4MHz
Operating Temperature:	Mounting Type:
-65°C ~ 150°C (TJ)	Through Hole
Package / Case:	Supplier Device Package:
TO-247-3	TO-247-3
Base Product Number:	
MJW21	

Environmental & Export classification

Moisture Sensitivity Level (MSL):	REACH Status:
1 (Unlimited)	REACH Unaffected
ECCN:	HTSUS:
EAR99	8541.29.0095

MJW21192 (NPN), MJW21191 (PNP)

Complementary Silicon Plastic Power Transistors

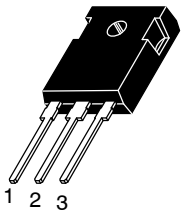
Specifically designed for power audio output, or high power drivers in audio amplifiers.

- DC Current Gain Specified up to 8.0 A at Temperature
- All On Characteristics at Temperature
- High SOA: 20 A, 18 V, 100 ms
- TO−247AE Package
- Pb−Free Packages are Available*

ON Semiconductor®

http://onsemi.com

8.0 A
POWER TRANSISTORS
COMPLEMENTARY SILICON
150 V, 125 W



TO−247
CASE 340L
STYLE 3

MAXIMUM RATINGS

Rating	Symbol	MJW21191 MJW21192	Unit
Collector−Emitter Voltage	V_{CEO}	150	Vdc
Collector−Base Voltage	V_{CB}	150	Vdc
Emitter−Base Voltage	V_{EB}	5.0	Vdc
Collector Current − Continuous − Peak	I_C	8.0 16	Adc
Base Current	I_B	2.0	Adc
Total Power Dissipation @ T_C = 25°C Derate above 25°C	P_D	125 0.65	W W/°C
Operating and Storage Junction Temperature Range	T_J, T_{stg}	−65 to +150	°C

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case	$R_{\theta JC}$	1.0	°C/W
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	50	°C/W

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

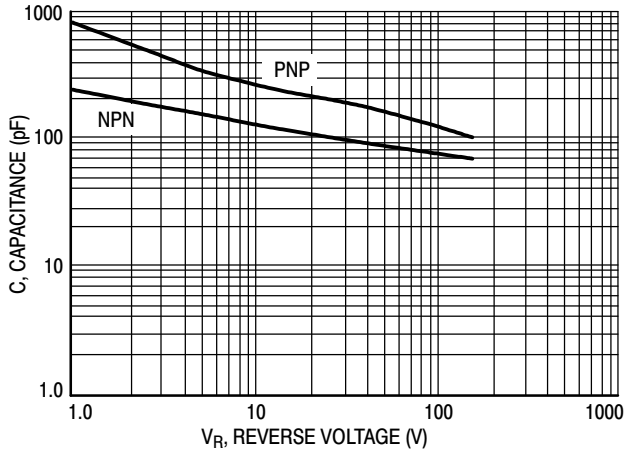
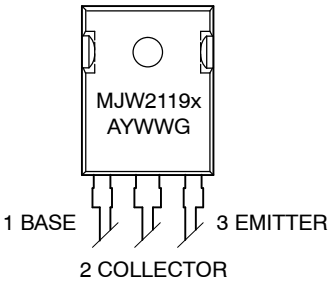


Figure 1. Typical Capacitance @ 25°C

*For additional information on our Pb−Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

MARKING DIAGRAM



x = 1 or 2
A = Assembly Location
Y = Year
WW = Work Week
G = Pb−Free Package

ORDERING INFORMATION

Device	Package	Shipping
MJW21191	TO−247	30 Units/Rail
MJW21191G	TO−247 (Pb−Free)	30 Units/Rail
MJW21192	TO−247	30 Units/Rail
MJW21192G	TO−247 (Pb−Free)	30 Units/Rail

ELECTRICAL CHARACTERISTICS (T_C = 25°C unless otherwise noted)

Characteristic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Collector−Emitter Sustaining Voltage (Note 1) (I_C = 10 mAdc, I_B = 0)	$V_{CEO(sus)}$	150	–	Vdc
Collector Cutoff Current (V_{CB} = 250 Vdc, I_E = 0)	I_{CES}	–	10	μAdc
Emitter Cutoff Current (V_{BE} = 5.0 Vdc, I_C = 0)	I_{EBO}	–	10	μAdc
ON CHARACTERISTICS (Note 1)				
DC Current Gain (I_C = 4.0 Adc, V_{CE} = 2.0 Vdc) (I_C = 8.0 Adc, V_{CE} = 2.0 Vdc)	h_{FE}	15 5.0	100 –	–
Collector−Emitter Saturation Voltage (I_C = 4.0 Adc, I_B = 0.4 Adc) (I_C = 8.0 Adc, I_B = 1.6 Adc)	$V_{CE(sat)}$	– –	1.0 2.0	Vdc
Base−Emitter On Voltage (I_C = 4.0 Adc, V_{CE} = 2.0 Vdc)	$V_{BE(on)}$	–	2.0	Vdc
DYNAMIC CHARACTERISTICS				
Current Gain − Bandwidth Product (Note 2) (I_C = 1.0 Adc, V_{CE} = 10 Vdc, f_{test} = 1.0 MHz)	f_T	4.0	–	MHz

1. Pulse Test: Pulse Width ≤ 300 μs, Duty Cycle ≤ 2.0%.
2. $f_T = |h_{fe}| \bullet f_{test}$.

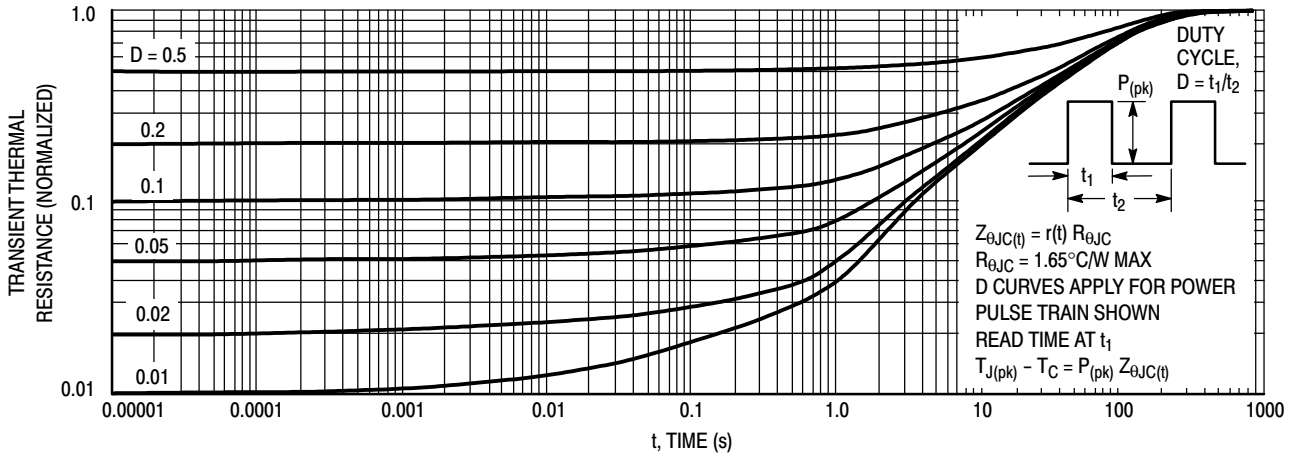


Figure 2. Thermal Response

There are two limitations on the power handling ability of a transistor: average junction temperature and second breakdown. Safe operating area curves indicate $I_C - V_{CE}$ limits of the transistor that must be observed for reliable operation, i.e., the transistor must not be subjected to greater dissipation then the curves indicate.

The data of Figures 3 and 4 is based on $T_{J(pk)}$ = 150°C; T_C is variable depending on conditions. Second breakdown pulse limits are valid for duty cycles to 10% provided $T_{J(pk)}$ < 150°C. $T_{J(pk)}$ may be calculated from the data in Figure 2. At high case temperatures, thermal limitations will reduce the power that can be handled to values less than the limitations imposed by second breakdown.

NPN — MJW21192

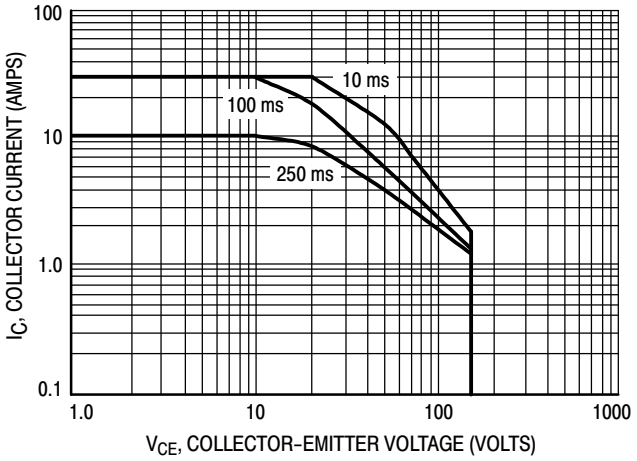


Figure 3. NPN — MJW21192 Safe Operating Area

PNP — MJW21191

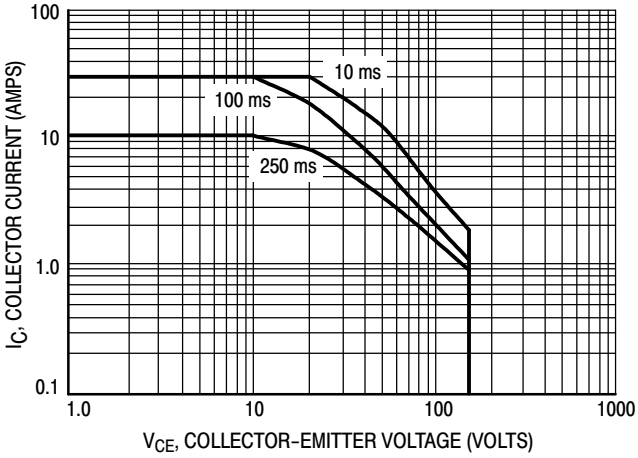


Figure 4. PNP — MJW21191 Safe Operating Area

TYPICAL CHARACTERISTICS

NPN — MJW21192

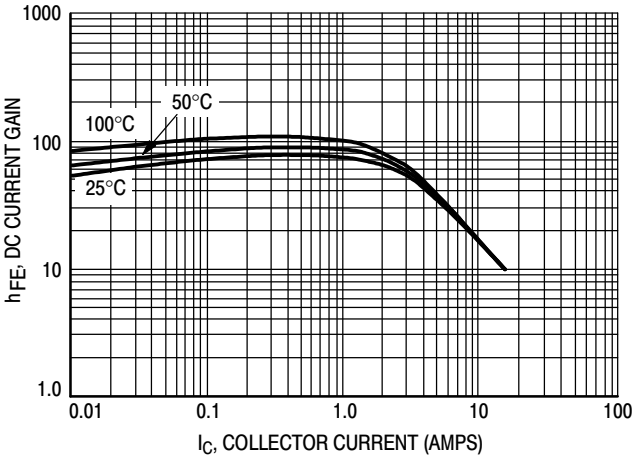


Figure 5. NPN — MJW21192 V_{CE} = 2.0 V DC Current Gain

PNP — MJW21191

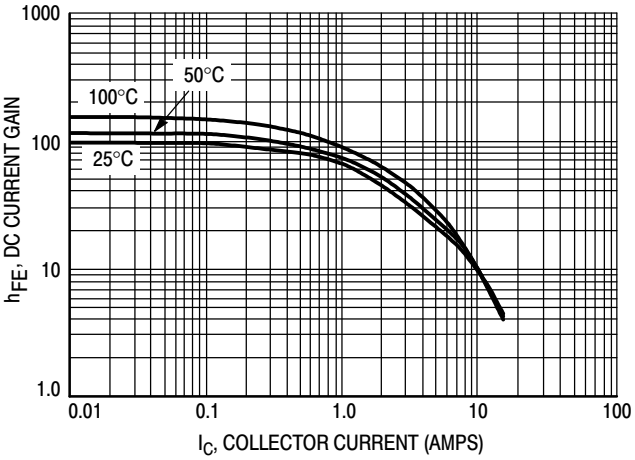


Figure 6. PNP — MJW21191 V_{CE} = 2.0 V DC Current Gain

MJW21192 (NPN), MJW21191 (PNP)

NPN — MJW21192

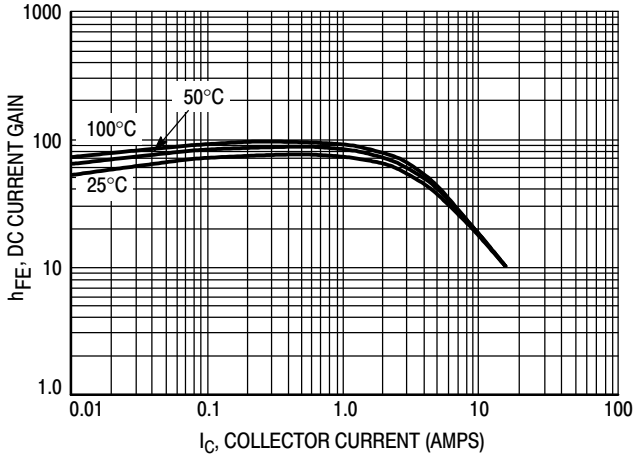


Figure 7. NPN — MJW21192
V_{CE} = 5.0 V DC Current Gain

PNP — MJW21191

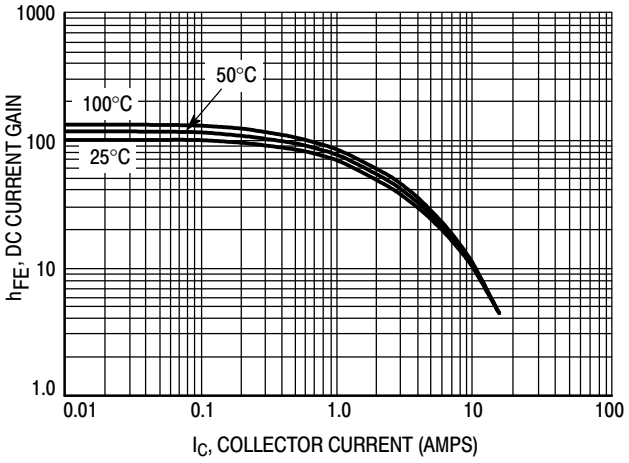


Figure 8. PNP — MJW21191
V_{CE} = 5.0 V DC Current Gain

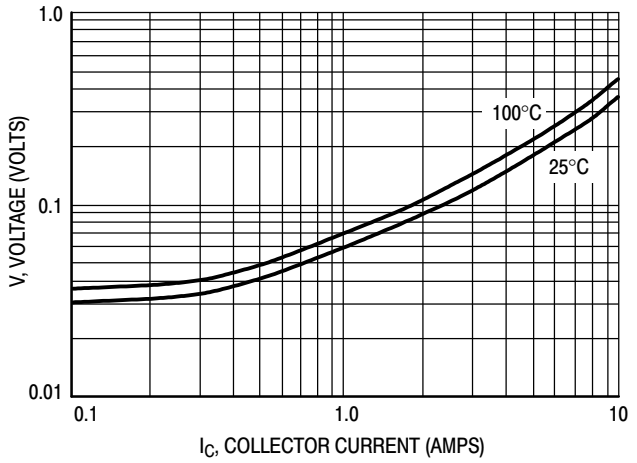


Figure 9. NPN — MJW21192
$V_{CE(sat)}$ I_C/I_B = 5.0

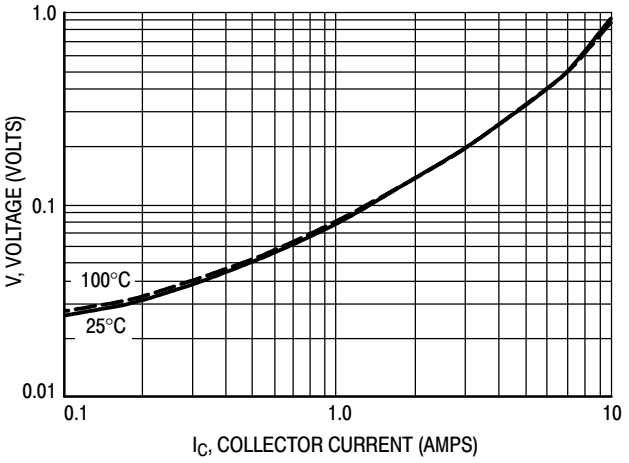


Figure 10. PNP — MJW21191
$V_{CE(sat)}$ I_C/I_B = 5.0

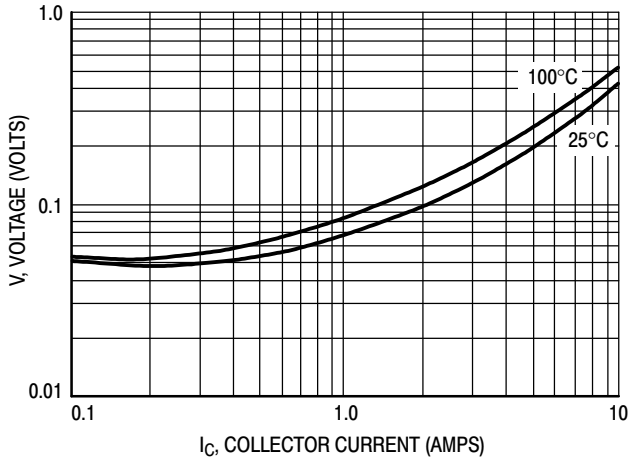


Figure 11. NPN — MJW21192
$V_{CE(sat)}$ I_C/I_B = 10

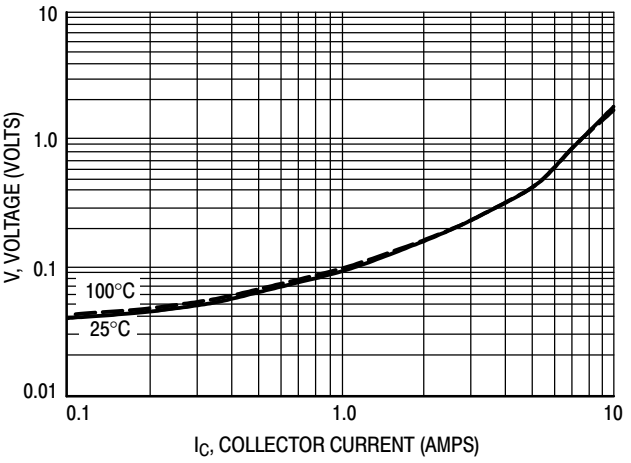


Figure 12. PNP — MJW21191
$V_{CE(sat)}$ I_C/I_B = 10

MJW21192 (NPN), MJW21191 (PNP)

NPN — MJW21192

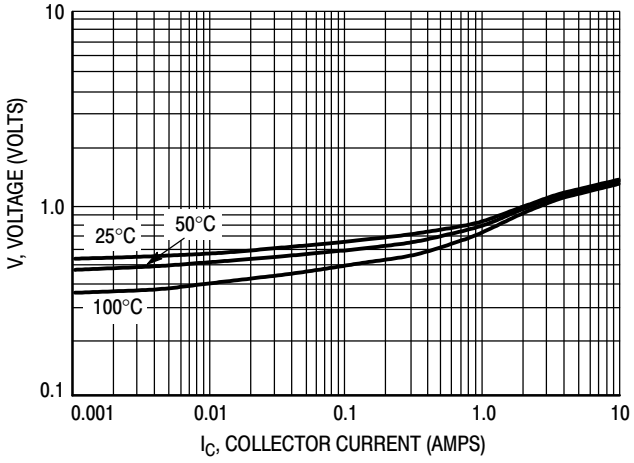


Figure 13. NPN — MJW21192 V_{CE} = 2.0 V $V_{BE(on)}$ Curve

PNP — MJW21191

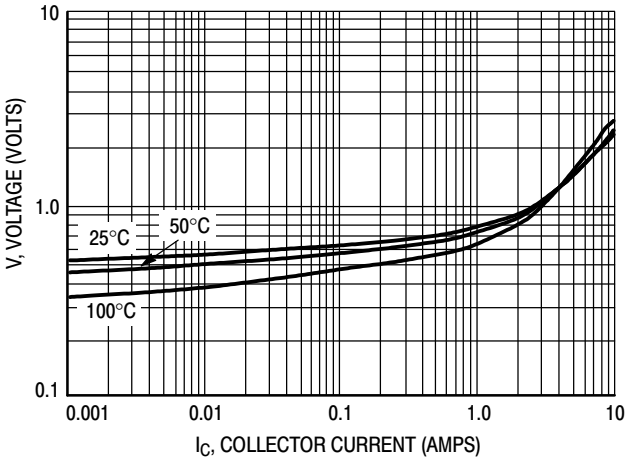
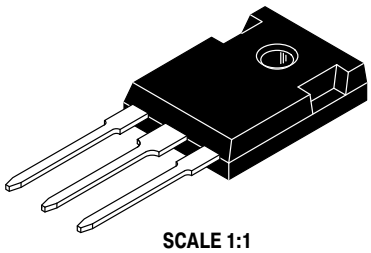


Figure 14. PNP — MJW21191 V_{CE} = 2.0 V $V_{BE(on)}$ Curve

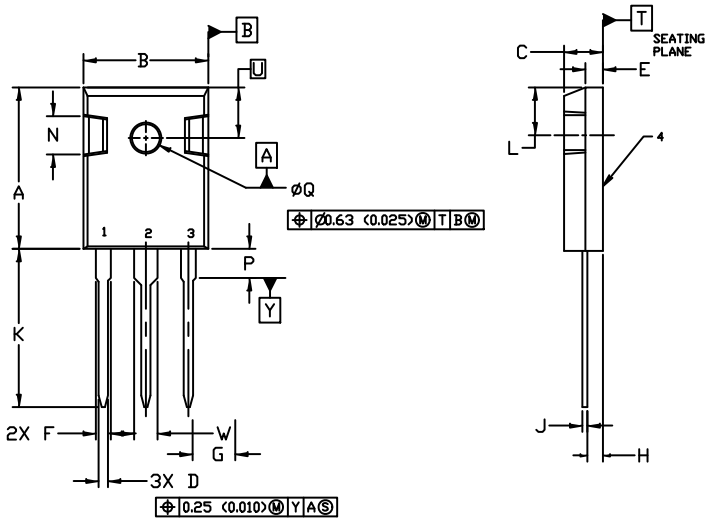
MECHANICAL CASE OUTLINE
PACKAGE DIMENSIONS



SCALE 1:1

TO−247
CASE 340L
ISSUE G

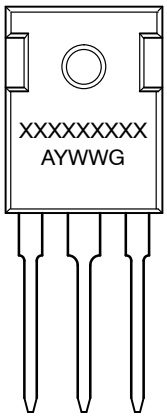
DATE 06 OCT 2021



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

	MILLIMETERS		INCHES	
DIM	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*



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

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

*This information is generic. Please refer to device data sheet for actual part marking. Pb−Free indicator, “G” or microdot “▪”, may or may not be present. Some products may not follow the Generic Marking.

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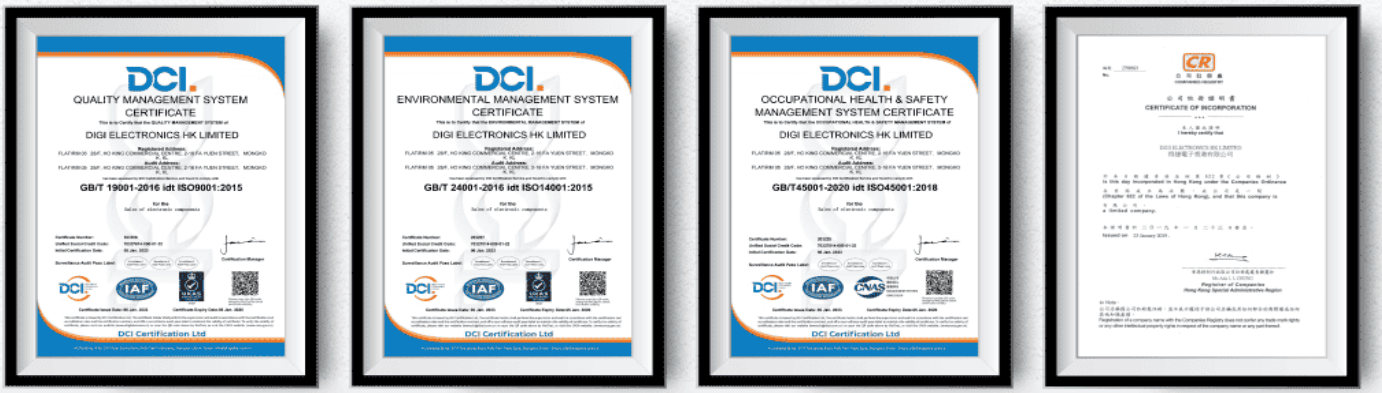

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