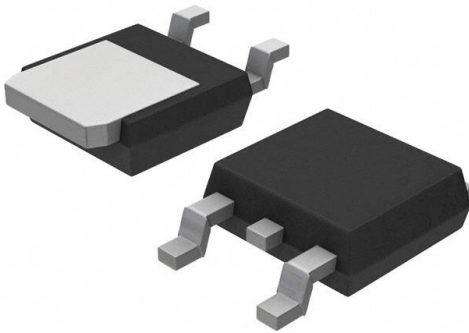


MJD340T4G Datasheet

www.digi-electronics.com



<https://www.DiGi-Electronics.com>

DiGi Electronics Part Number	MJD340T4G-DG
Manufacturer	onsemi
Manufacturer Product Number	MJD340T4G
Description	TRANS NPN 300V 0.5A DPAK
Detailed Description	Bipolar (BJT) Transistor NPN 300 V 500 mA 10MHz 1.5 W Surface Mount DPAK



Tel: +00 852-30501935

RFQ Email: Info@DiGi-Electronics.com

DiGi is a global authorized distributor of electronic components.

Purchase and inquiry

Manufacturer Product Number:

MJD340T4G

Series:

-

Transistor Type:

NPN

Voltage - Collector Emitter Breakdown (Max):

300 V

Current - Collector Cutoff (Max):

100µA

Power - Max:

15 W

Operating Temperature:

-65°C ~ 150°C (TJ)

Package / Case:

TO-252-3, DPAK (2 Leads + Tab), SC-63

Base Product Number:

MJD340

Manufacturer:

onsemi

Product Status:

Active

Current - Collector (Ic) (Max):

500 mA

Vce Saturation (Max) @ Ib, Ic:

-

DC Current Gain (hFE) (Min) @ Ic, Vce:

30 @ 50mA, 10V

Frequency - Transition:

10MHz

Mounting Type:

Surface Mount

Supplier Device Package:

DPAK

Environmental & Export classification

RoHS Status:

ROHS3 Compliant

REACH Status:

REACH Unaffected

HTSUS:

8541.29.0095

Moisture Sensitivity Level (MSL):

1 (Unlimited)

ECCN:

EAR99

High Voltage Power Transistors

DPAK for Surface Mount Applications

MJD340 (NPN), MJD350 (PNP)

Designed for line operated audio output amplifier, switchmode power supply drivers and other switching applications.

Features

- Lead Formed for Surface Mount Applications in Plastic Sleeves (No Suffix)
- Electrically Similar to Popular MJE340 and MJE350
- Epoxy Meets UL 94 V-0 @ 0.125 in
- NJV Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable
- These Devices are Pb-Free, Halogen Free/BFR Free and are RoHS Compliant

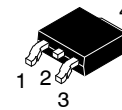
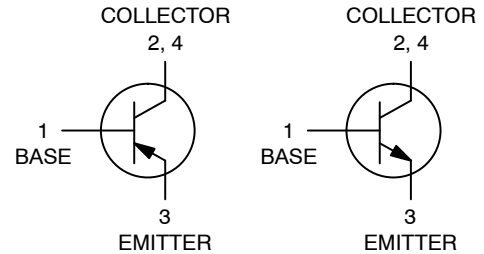
MAXIMUM RATINGS

Rating	Symbol	Max	Unit
Collector-Emitter Voltage	V_{CEO}	300	Vdc
Collector-Base Voltage	V_{CB}	300	Vdc
Emitter-Base Voltage	V_{EB}	3	Vdc
Collector Current - Continuous	I_C	0.5	Adc
Collector Current - Peak	I_{CM}	0.75	Adc
Total Power Dissipation @ $T_C = 25^\circ\text{C}$ Derate above 25°C	P_D	15 0.12	W W/ $^\circ\text{C}$
Total Power Dissipation (Note 1) @ $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	1.56 0.012	W W/ $^\circ\text{C}$
Operating and Storage Junction Temperature Range	T_J, T_{stg}	-65 to +150	$^\circ\text{C}$
ESD - Human Body Model MJD340 (NPN) MJD350 (PNP)	HBM	3B 2	V
ESD - Machine Model MJD340 (NPN) MJD350 (PNP)	MM	M4 M4	V

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

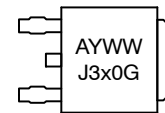
1. These ratings are applicable when surface mounted on the minimum pad sizes recommended.

SILICON POWER TRANSISTORS 0.5 AMPERE 300 VOLTS, 15 WATTS



**DPAK
CASE 369C
STYLE 1**

MARKING DIAGRAM



- A = Assembly Location
- Y = Year
- WW = Work Week
- J3x0 = Device Code
x= 4 or 5
- G = Pb-Free Package

ORDERING INFORMATION

See detailed ordering and shipping information in the package dimensions section on page 5 of this data sheet.

MJD340 (NPN), MJD350 (PNP)**THERMAL CHARACTERISTICS**

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	8.33	$^{\circ}C/W$
Thermal Resistance, Junction-to-Ambient (Note 2)	$R_{\theta JA}$	80	$^{\circ}C/W$
Leading Temperature for Soldering Purpose	T_L	260	$^{\circ}C$

2. These ratings are applicable when surface mounted on the minimum pad sizes recommended.

ELECTRICAL CHARACTERISTICS ($T_C = 25^{\circ}C$ unless otherwise noted)

Characteristic	Symbol	Min	Max	Unit
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OFF CHARACTERISTICS

Collector-Emitter Sustaining Voltage (Note 3) ($I_C = 1\text{ mA}$, $I_B = 0$)	$V_{CEO(sus)}$	300	-	V
Collector Cutoff Current ($V_{CB} = 300\text{ V}$, $I_E = 0$)	I_{CEO}	-	0.1	mA
Emitter Cutoff Current ($V_{BE} = 3\text{ V}$, $I_C = 0$)	I_{EBO}	-	0.1	mA

ON CHARACTERISTICS (Note 3)

DC Current Gain ($I_C = 50\text{ mA}$, $V_{CE} = 10\text{ V}$)	h_{FE}	30	240	-
Collector-Emitter Saturation Voltage ($I_C = 100\text{ mA}$, $I_B = 10\text{ mA}$)	$V_{CE(sat)}$	-	1	V
Base-Emitter On Voltage ($I_C = 1\text{ A}$, $V_{CE} = 10\text{ V}$)	$V_{BE(on)}$	-	1.5	V

DYNAMIC CHARACTERISTICS

Current Gain – Bandwidth Product ($I_C = 50\text{ mA}$, $V_{CE} = 10\text{ V}$, $f = 10\text{ MHz}$)	f_T	10	-	MHz
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Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

3. Pulse Test: Pulse Width $\leq 300\ \mu s$, Duty Cycle $\leq 2\%$.

MJD340 (NPN), MJD350 (PNP)

TYPICAL CHARACTERISTICS

MJD340

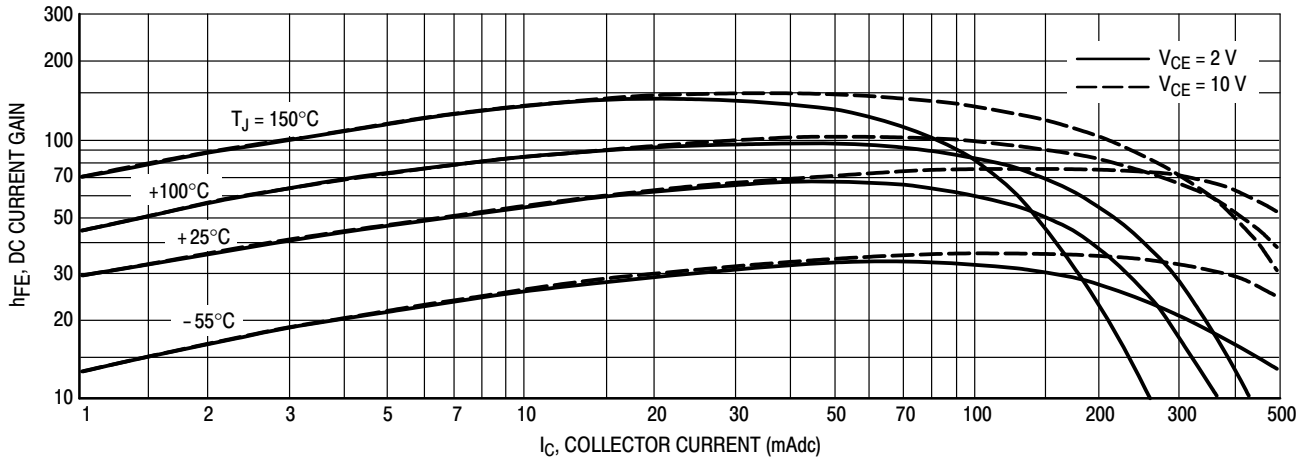


Figure 1. DC Current Gain

MJD340

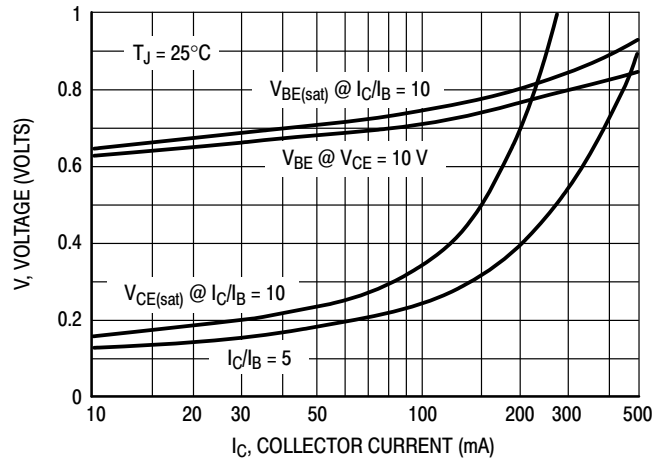


Figure 2. "On" Voltages

MJD350

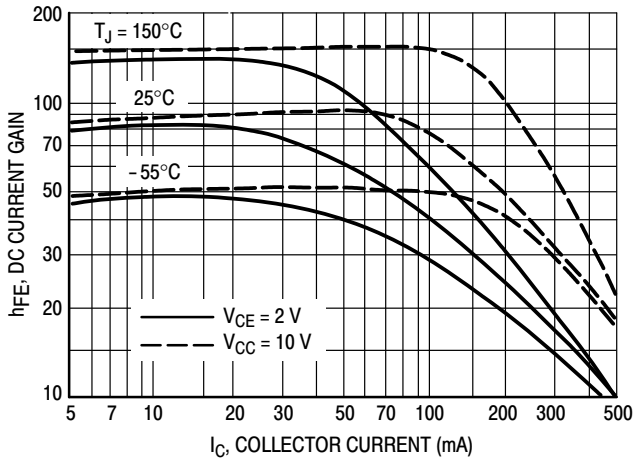


Figure 3. DC Current Gain

MJD350

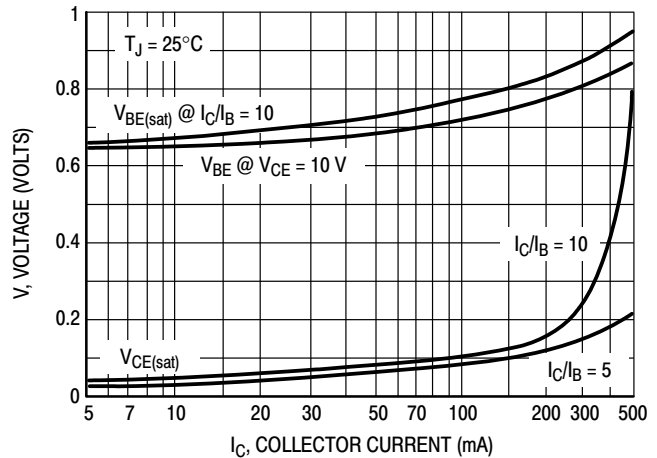


Figure 4. "On" Voltages

MJD340 (NPN), MJD350 (PNP)

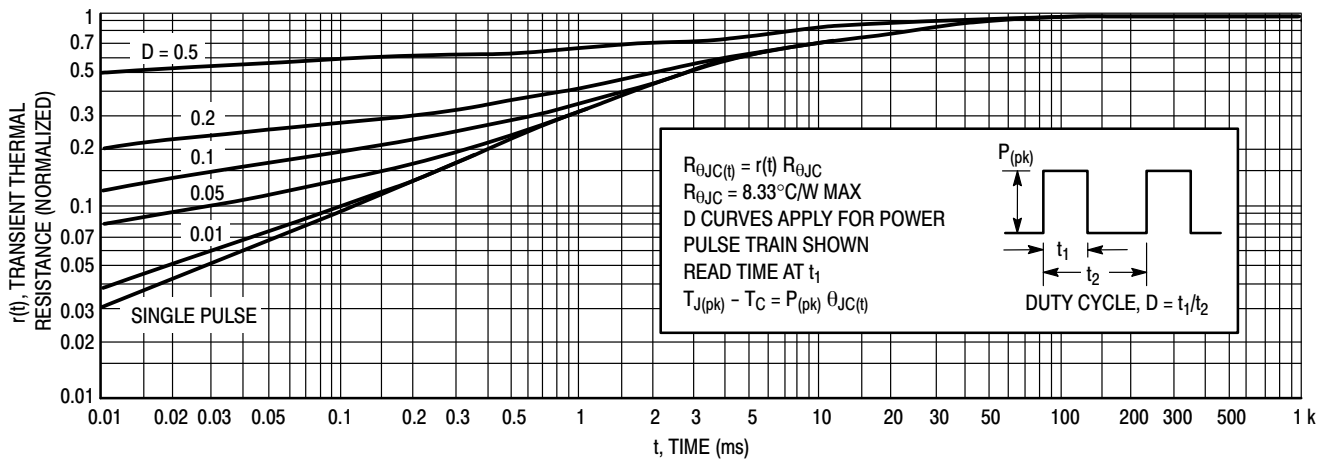


Figure 5. Thermal Response

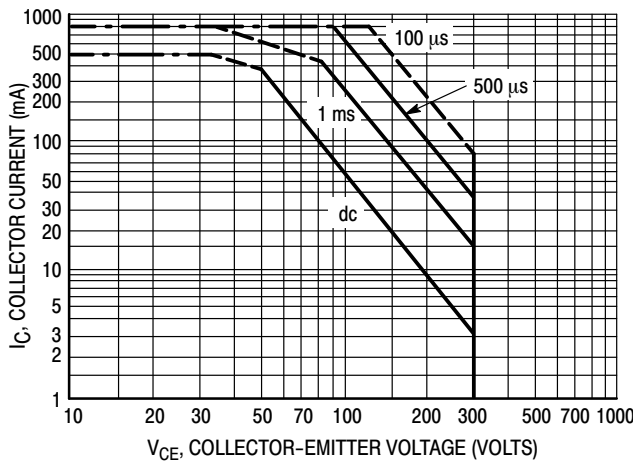


Figure 6. Active Region Safe Operating Area

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 than the curves indicate.

The data of Figure 6 is based on $T_{J(pk)} = 150^{\circ}\text{C}$; T_C is variable depending on conditions. Second breakdown pulse limits are valid for duty cycles to 10% provided $T_{J(pk)} \leq 150^{\circ}\text{C}$. $T_{J(pk)}$ may be calculated from the data in Figure 5. At high case temperatures, thermal limitations will reduce the power that can be handled to values less than the limitations imposed by second breakdown.

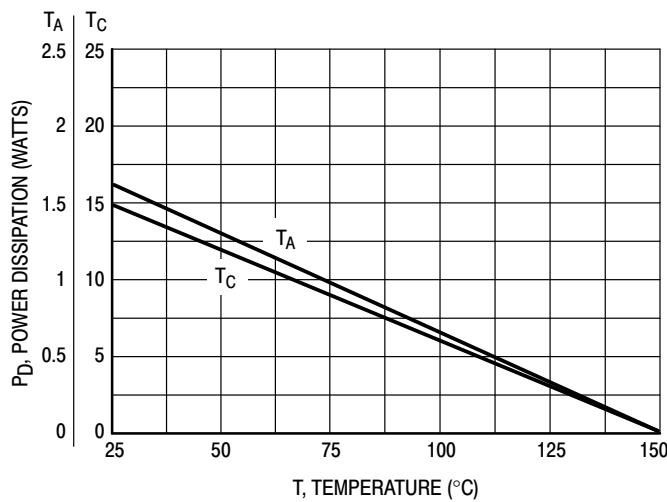


Figure 7. Power Derating

MJD340 (NPN), MJD350 (PNP)**ORDERING INFORMATION**

Device	Package	Shipping†
MJD340G	DPAK (Pb-Free)	75 Units / Rail
MJD340RLG	DPAK (Pb-Free)	1,800 / Tape & Reel
MJD340T4G	DPAK (Pb-Free)	2,500 / Tape & Reel
MJD340T4GN	DPAK (Pb-Free)	2,500 / Tape & Reel
NJVMJD340T4G	DPAK (Pb-Free)	2,500 / Tape & Reel
MJD350G	DPAK (Pb-Free)	75 Units / Rail
MJD350T4G	DPAK (Pb-Free)	2,500 / Tape & Reel
MJD350T4GN	DPAK (Pb-Free)	2,500 / Tape & Reel
NJVMJD350T4G	DPAK (Pb-Free)	2,500 / Tape & Reel

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

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