

Features

- Halogen Free. "Green" Device (Note 1)
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

Maximum Ratings @ 25°C Unless Otherwise Specified

- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C

NPN Transistor

Parameter	Symbol	Rating	Unit
Collector-Base Voltage	V_{CBO}	50	V
Collector-Emitter Voltage	V_{CEO}	50	V
Emitter-Base Voltage	V_{EBO}	10	V
Continuous Collector Current	I_C	100	mA
Power Dissipation	P_D	200	mW
Thermal Resistance Junction to Ambient	$R_{\theta JA}$	625	°C/W

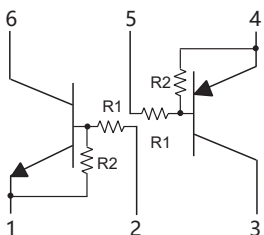
PNP Transistor

Parameter	Symbol	Rating	Unit
Collector-Base Voltage	V_{CBO}	-50	V
Collector-Emitter Voltage	V_{CEO}	-50	V
Emitter-Base Voltage	V_{EBO}	-10	V
Continuous Collector Current	I_C	-100	mA
Power Dissipation	P_D	200	mW
Thermal Resistance Junction to Ambient	$R_{\theta JA}$	625	°C/W

Note: 1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

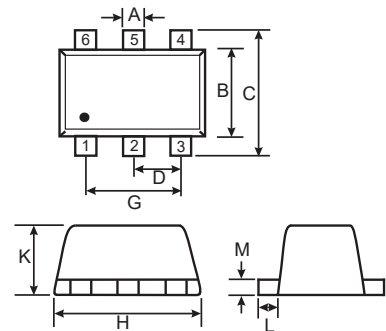
Marking: D3

Internal Structure



Dual Digital Transistors

SOT-563



DIM	DIMENSIONS				NOTE
	INCHES		MM		
	MIN	MAX	MIN	MAX	
A	0.006	0.011	0.15	0.30	
B	0.043	0.051	1.10	1.30	
C	0.059	0.067	1.50	1.70	
D	0.020		0.50		TYP.
G	0.035	0.043	0.90	1.10	
H	0.059	0.067	1.50	1.70	
K	0.022	0.026	0.55	0.65	
L	0.004	0.011	0.10	0.30	
M	0.004	0.007	0.10	0.18	

Electrical Characteristics @ T_A=25°C Unless Otherwise Specified
NPN Transistor

Parameter	Symbol	Min	Typ	Max	Unit	Conditions
Input Voltage	V _{I(off)}	0.5	---	---	V	V _{CC} =5V, I _O =100μA
	V _{I(on)}	---	---	3.0	V	V _O =0.3V, I _O =10mA
Output Voltage	V _{O(on)}	---	---	0.3	V	I _O =10mA, I _I =0.5mA
Input Current	I _I	---	---	0.88	mA	V _I =5V
Output Current	I _{O(off)}	---	---	0.5	μA	V _{CC} =50V, V _I =0
DC Current Gain	G _I	30	---	---		V _O =5V, I _O =5mA
Input Resistance	R ₁	7.0	10	13	KΩ	
Resistance Ratio	R ₂ /R ₁	0.8	1.0	1.2		
Transition Frequency	f _T	---	250	---	MHz	V _{CE} =10V, I _E =5mA, f=100MHz

PNP Transistor

Parameter	Symbol	Min	Typ	Max	Unit	Conditions
Input Voltage	V _{I(off)}	-0.5	---	---	V	V _{CC} =-5V, I _O =-100μA
	V _{I(on)}	---	---	-3.0	V	V _O =-0.3V, I _O =-10mA
Output Voltage	V _{O(on)}	---	---	-0.3	V	I _O =-10mA, I _I =-0.5mA
Input Current	I _I	---	---	-0.88	mA	V _I =-5V
Output Current	I _{O(off)}	---	---	-0.5	μA	V _{CC} =-50V, V _I =0
DC Current Gain	G _I	30	---	---		V _O =-5V, I _O =-5mA
Input Resistance	R ₁	7	10	13	KΩ	
Resistance Ratio	R ₂ /R ₁	0.8	1.0	1.2		
Transition Frequency	f _T	---	250	---	MHz	V _{CE} =-10V, I _E =-5mA, f=100MHz

Curve Characteristics(NPN)

Fig. 1 - DC Current Gain Characteristics

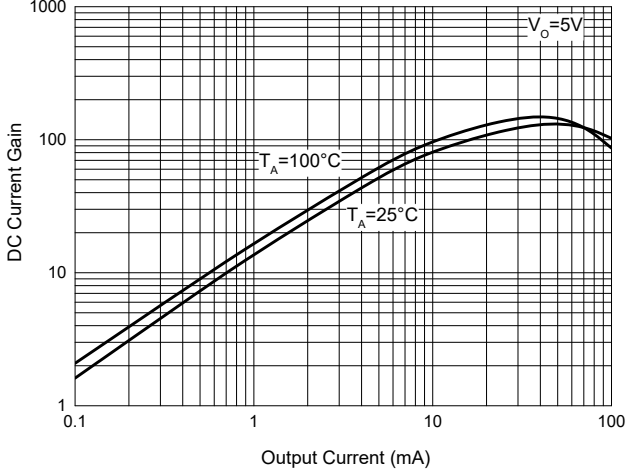


Fig. 2 - Input Voltage (on) Characteristics

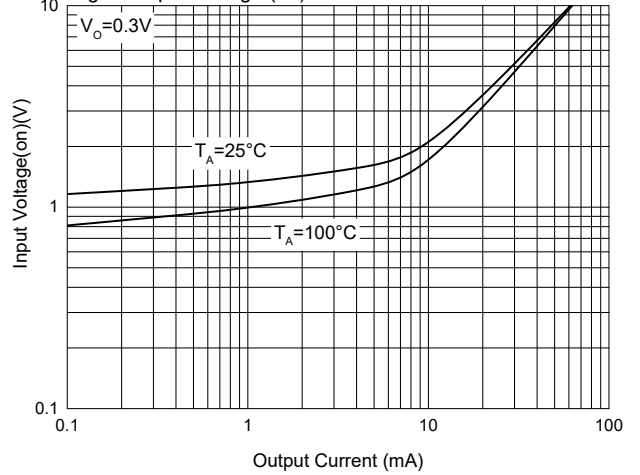


Fig. 3 - Input Voltage (off) Characteristics

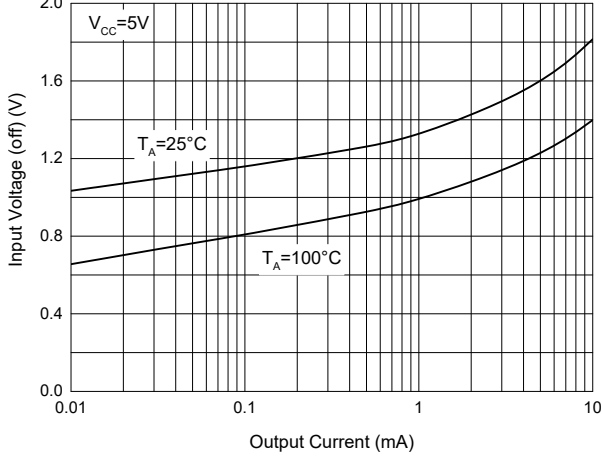
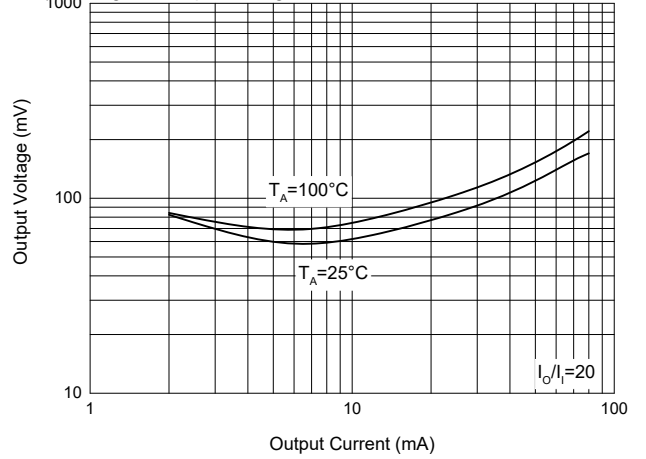


Fig. 4 - Output Voltage Characteristics



Curve Characteristics(PNP)

Fig. 1 - DC Current Gain Characteristics

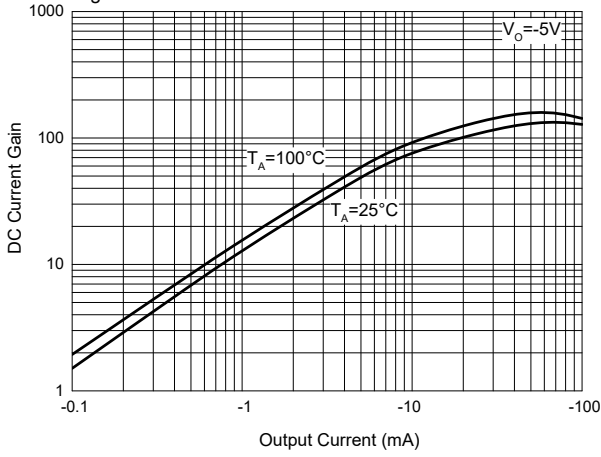


Fig. 2 - Input Voltage (on) Characteristics

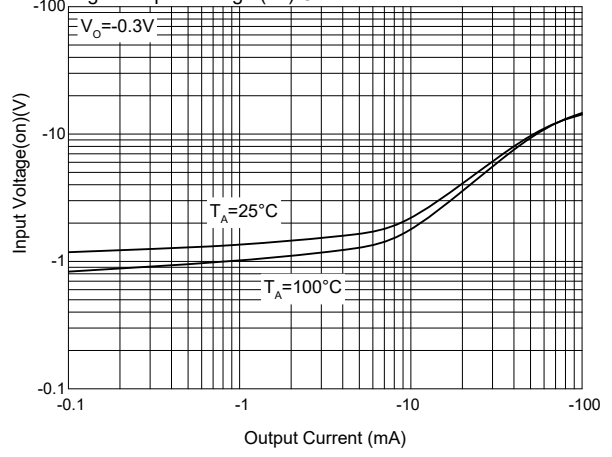


Fig. 3 - Input Voltage (off) Characteristics

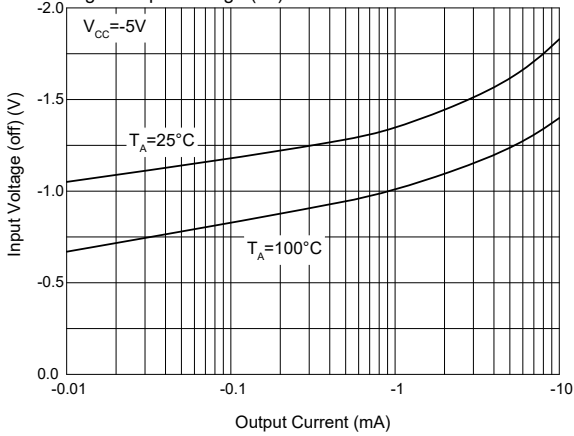
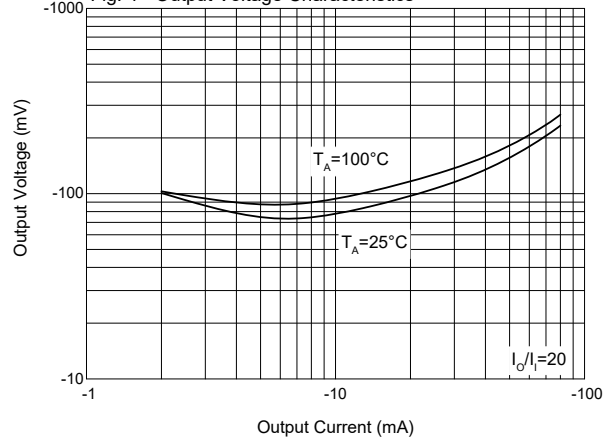


Fig. 4 - Output Voltage Characteristics



Ordering Information

Device	Packing
Part Number-TP	Tape&Reel: 3Kpcs/Reel
Part Number-TPQ2	Tape&Reel: 3Kpcs/Reel

For packaging details, go to our website at <https://www.mccsemi.com/pdf/ProductPackaging/SOT-563%20Package.pdf>

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