

NSM80100MT1G

PNP Transistor with Dual Series Switching Diode

Features

- These Devices are Pb-Free, Halogen Free/BFR Free and are RoHS Compliant

Typical Applications

- LCD Control Board
- High Speed Switching
- High Voltage Switching

MAXIMUM RATINGS – PNP TRANSISTOR

Rating	Symbol	Value	Unit
Collector – Emitter Voltage	V_{CEO}	-80	Vdc
Collector – Base Voltage	V_{CBO}	-80	Vdc
Emitter – Base Voltage	V_{EBO}	-4.0	Vdc
Collector Current – Continuous	I_C	-500	mAdc

MAXIMUM RATINGS – SWITCHING DIODE

Rating	Symbol	Value	Unit
Peak Reverse Voltage	V_R	100	V
Peak Forward Current	I_F	200	mA
Peak Forward Surge Current $t < 1 \text{ sec}$ $t = 1 \text{ } \mu\text{sec}$	I_{FSM}	1.0 20	A
Operating and Storage Junction Temperature Range	T_J, T_{stg}	-55 to +150	°C

THERMAL CHARACTERISTICS

Rating	Symbol	Max	Unit
Total Device Dissipation FR-5 Board, (Note 1) @ $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	400	mW mW/°C
Thermal Resistance from Junction-to-Ambient (Note 1)	$R_{\theta JA}$	313	°C/W
Total Device Dissipation FR-5 Board (Note 2) $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	270	mW mW/°C
Thermal Resistance, Junction-to-Ambient (Note 2)	$R_{\theta JA}$	463	°C/W
Junction and Storage Temperature Range	T_J, T_{stg}	-55 to +150	°C

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.

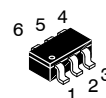
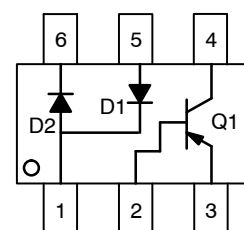
1. FR-5 = 650 mm² pad, 2.0 oz Cu.
2. FR-5 = 10 mm² pad, 2.0 oz Cu.



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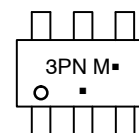
<http://onsemi.com>

PNP Transistor with Dual Series Switching Diode



SC-74
CASE 318F

MARKING DIAGRAM



3PN = Device Code
M = Date Code*
▪ = Pb-Free Package

(Note: Microdot may be in either location)
*Date Code orientation may vary depending upon manufacturing location.

ORDERING INFORMATION

Device	Package	Shipping [†]
NSM80100MT1G	SC-74 (Pb-Free)	3000 / Tape & Reel

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

NSM80100MT1G

Q1: PNP TRANSISTOR

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

Characteristic	Symbol	Min	Max	Unit
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OFF CHARACTERISTICS

Collector – Emitter Breakdown Voltage (Note 3) ($I_C = -1.0\text{ mA}$, $I_B = 0$)	$V_{(BR)CEO}$	-80	–	V
Emitter – Base Breakdown Voltage ($I_E = -100\text{ }\mu\text{A}$, $I_C = 0$)	$V_{(BR)EBO}$	-4.0	–	V
Collector Cutoff Current ($V_{CE} = -60\text{ V}$, $I_B = 0$)	I_{CES}	–	-0.1	μA
Collector Cutoff Current ($V_{CB} = -80\text{ V}$, $I_E = 0$)	I_{CBO}	–	-0.1	μA

ON CHARACTERISTICS (Note 3)

DC Current Gain ($I_C = -10\text{ mA}$, $V_{CE} = -1.0\text{ V}$)	h_{FE}	120	–	–
Collector – Emitter Saturation Voltage ($I_C = -100\text{ mA}$, $I_B = -10\text{ mA}$)	$V_{CE(sat)}$	–	-0.25	V
Base – Emitter Saturation Voltage ($I_C = -100\text{ mA}$, $V_{CE} = -1.0\text{ V}$)	$V_{BE(sat)}$	–	-1.2	V

SMALL-SIGNAL CHARACTERISTICS

Current – Gain – Bandwidth Product (Note 4) ($I_C = -100\text{ mA}$, $V_{CE} = -2.0\text{ V}$, $f = 100\text{ MHz}$)	f_T	150	–	MHz
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3. Pulse Test: Pulse Width $\leq 300\text{ }\mu\text{s}$, Duty Cycle $\leq 2.0\%$.

4. f_T is defined as the frequency at which $|h_{fe}|$ extrapolates to unity.

D1, D2: SWITCHING DIODE ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Characteristic	Symbol	Min	Max	Unit
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OFF CHARACTERISTICS

Reverse Breakdown Voltage	$V_{(BR)}$	75	–	V
Reverse Voltage Leakage Current ($V_R = 75\text{ V}$) ($V_R = 20\text{ V}$, $T_J = 150^\circ\text{C}$) ($V_R = 75\text{ V}$, $T_J = 150^\circ\text{C}$)	I_R	– – –	1.0 30 100	μA
Diode Capacitance ($V_R = 0\text{ V}$, $f = 1.0\text{ MHz}$)	C_D	–	1.5	pF
Forward Voltage ($I_F = 1.0\text{ mA}$) ($I_F = 10\text{ mA}$) ($I_F = 50\text{ mA}$) ($I_F = 150\text{ mA}$)	V_F	– – – –	715 855 1000 1250	mV
Reverse Recovery Time ($I_F = I_R = 10\text{ mA}$, $i_{R(REC)} = 1.0\text{ mA}$, $R_L = 100\text{ }\Omega$)	t_{rr}	–	4.0	ns
Forward Recovery Voltage ($I_F = 10\text{ mA}$, $t_r = 20\text{ ns}$)	V_{FR}	–	1.75	V

TYPICAL CHARACTERISTICS

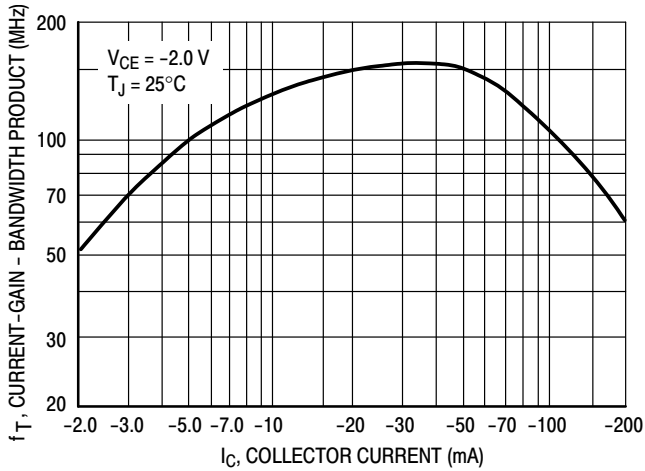


Figure 1. Current-Gain — Bandwidth Product

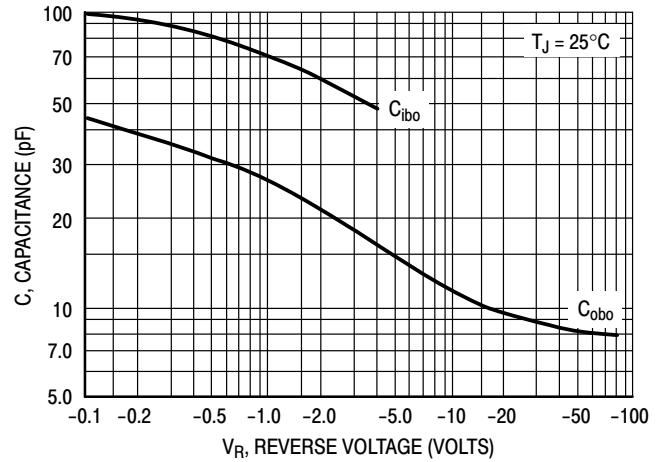


Figure 2. Capacitance

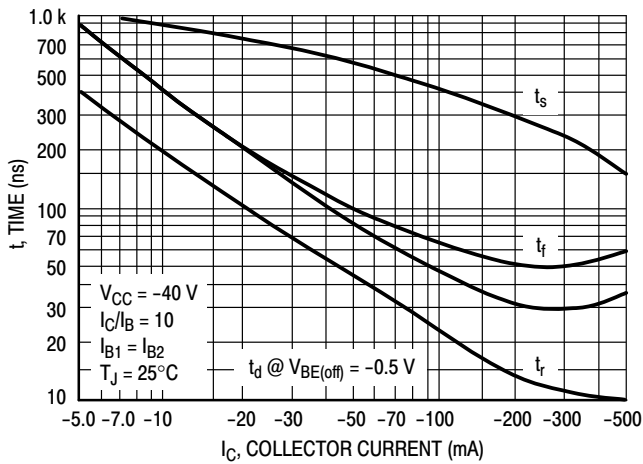


Figure 3. Switching Time

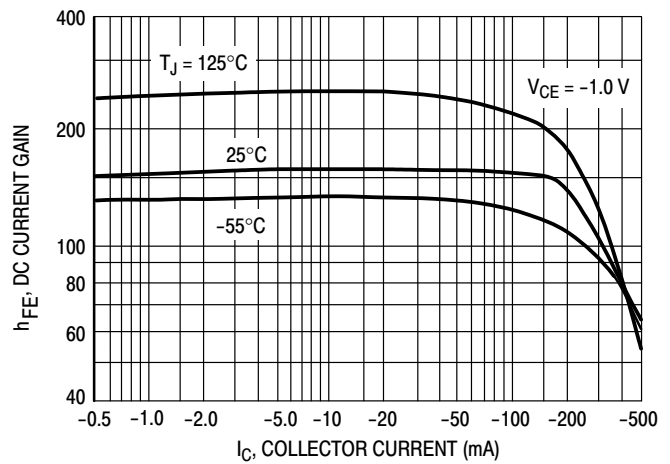


Figure 4. DC Current Gain

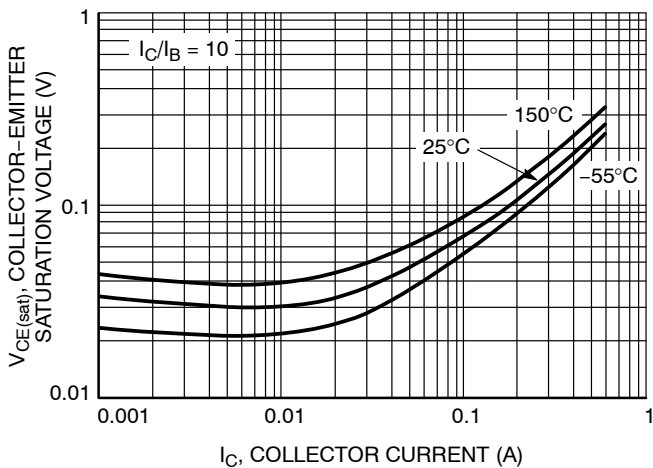


Figure 5. Collector-Emitter Saturation Voltage vs. Collector Current

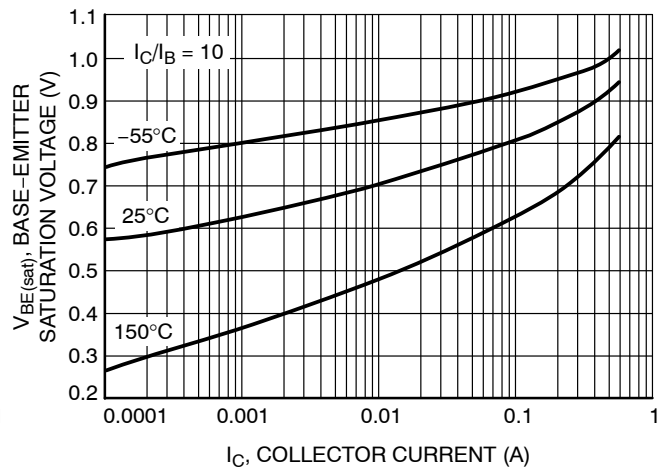


Figure 6. Base-Emitter Saturation Voltage vs. Collector Current

TYPICAL CHARACTERISTICS

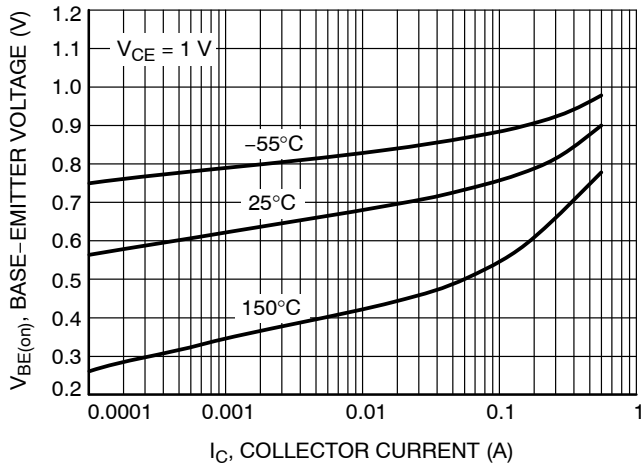


Figure 7. Base-Emitter Voltage vs. Collector Current

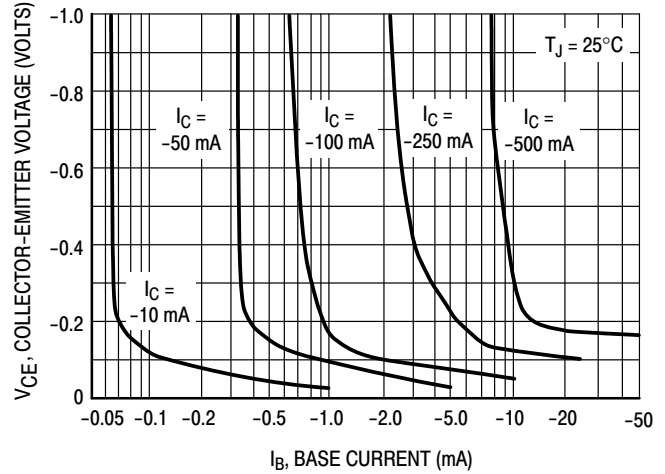


Figure 8. Collector Saturation Region

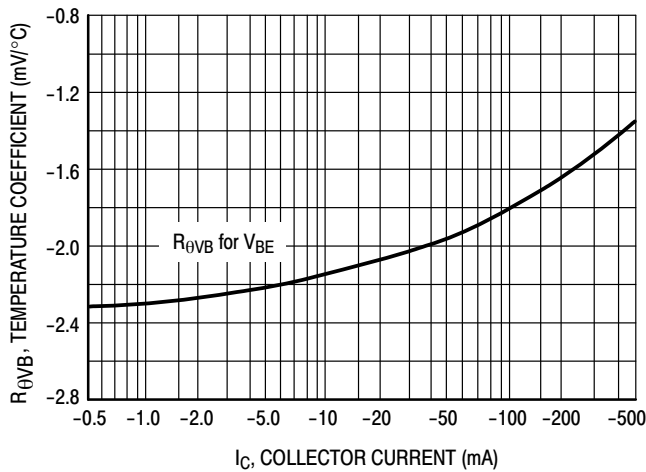


Figure 9. Base-Emitter Temperature Coefficient

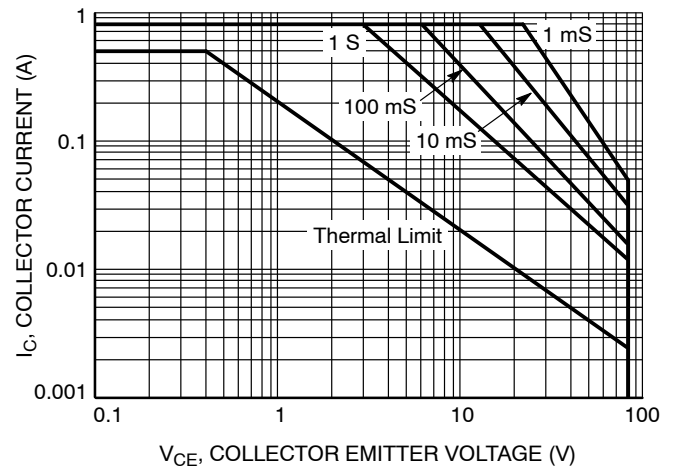


Figure 10. Safe Operating Area

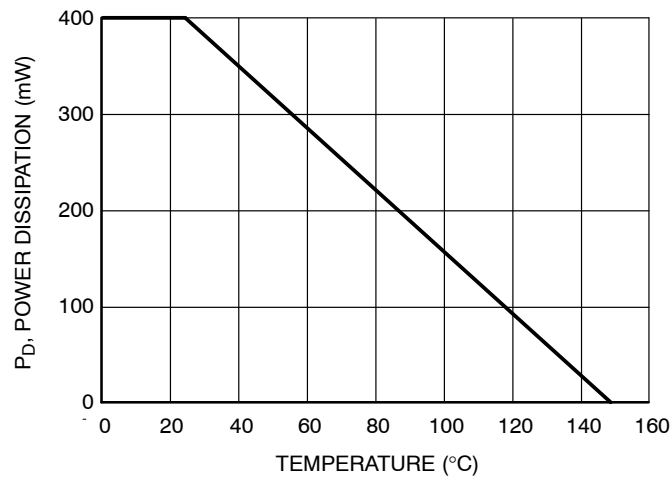


Figure 11. Operating Temperature Derating

TYPICAL CHARACTERISTICS

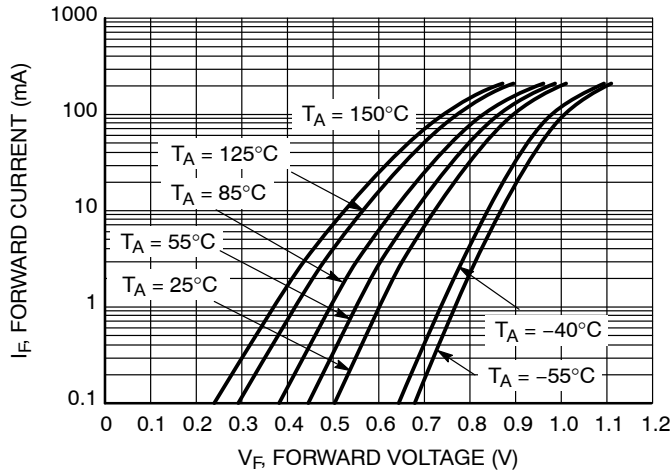


Figure 12. Forward Voltage

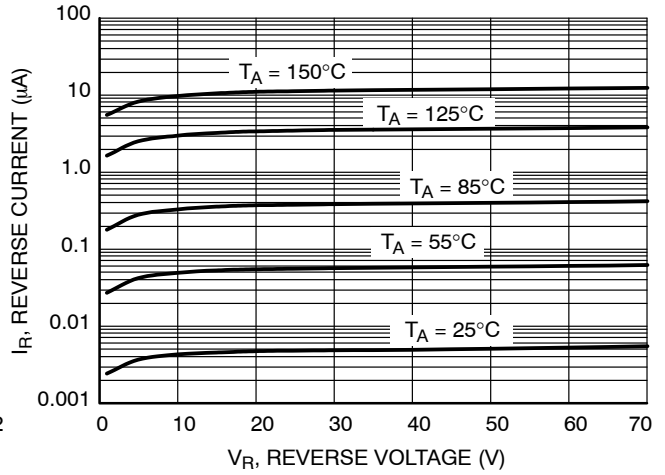


Figure 13. Leakage Current

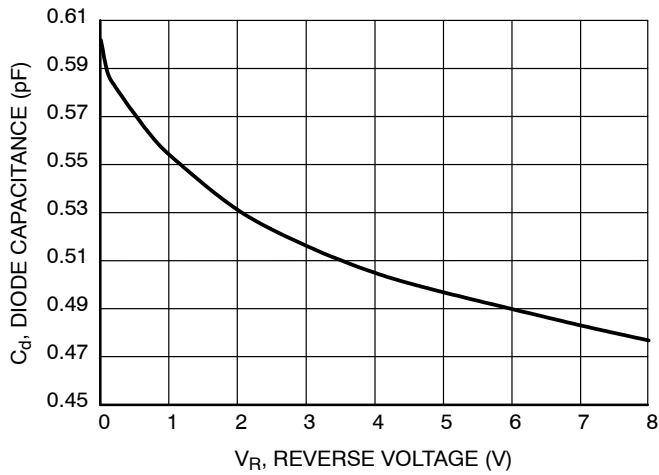


Figure 14. Capacitance

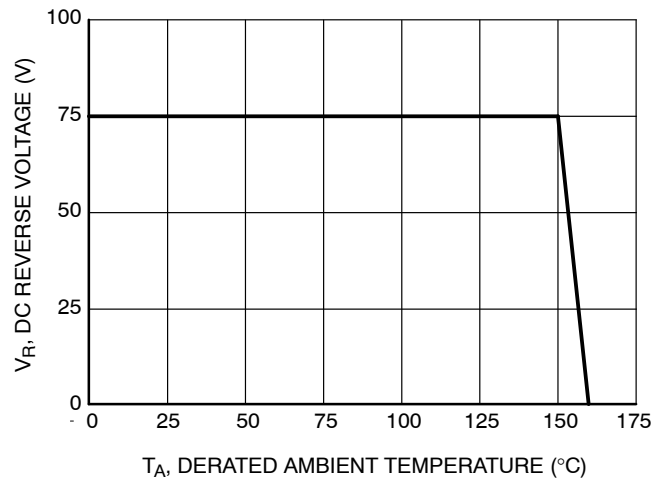


Figure 15. Diode Power Dissipation Curve

Данный компонент на территории Российской Федерации

Вы можете приобрести в компании MosChip.

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

<http://moschip.ru/get-element>

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

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