

MMBF5484LT1

Preferred Device

JFET Transistor

N-Channel

Features

- Pb-Free Package is Available

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Drain–Gate Voltage	V_{DG}	25	Vdc
Reverse Gate–Source Voltage	$V_{GS(r)}$	25	Vdc
Forward Gate Current	$I_{G(f)}$	10	mAdc
Continuous Device Dissipation at or Below $T_C = 25^\circ\text{C}$ Linear Derating Factor	P_D	200 2.8	mW mW/°C
Storage Channel Temperature Range	T_{stg}	–65 to +150	°C

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Total Device Dissipation FR–5 Board, (Note 1) $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	225 1.8	mW mW/°C
Thermal Resistance, Junction–to–Ambient	$R_{\theta JA}$	556	°C/W
Junction and Storage Temperature	T_J, T_{stg}	–55 to +150	°C

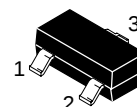
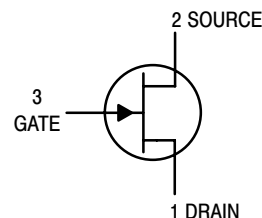
Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

1. FR–5 = 1.0 x 0.75 x 0.062 in.



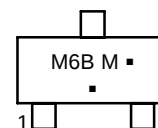
ON Semiconductor®

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SOT-23 (TO-236)
CASE 318
STYLE 10

MARKING DIAGRAM



M6B = Device Code

M = Date Code*

■ = Pb-Free Package

(Note: Microdot may be in either location)

*Date Code orientation and/or overbar may vary depending upon manufacturing location.

ORDERING INFORMATION

Device	Package	Shipping†
MMBF5484LT1	SOT-23	3,000 / Tape & Reel
MMBF5484LT1G	SOT-23 (Pb-Free)	3,000 / 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.

Preferred devices are recommended choices for future use and best overall value.

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

Characteristic	Symbol	Min	Max	Unit
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OFF CHARACTERISTICS

Gate-Source Breakdown Voltage ($I_G = -1.0\ \mu\text{Adc}$, $V_{DS} = 0$)	$V_{(BR)GSS}$	-25	-	Vdc
Gate Reverse Current ($V_{GS} = -20\ \text{Vdc}$, $V_{DS} = 0$) ($V_{GS} = -20\ \text{Vdc}$, $V_{DS} = 0$, $T_A = 100^\circ\text{C}$)	I_{GSS}	-	-1.0 -0.2	nAdc μAdc
Gate Source Cutoff Voltage ($V_{DS} = 15\ \text{Vdc}$, $I_D = 10\ \text{nAdc}$)	$V_{GS(off)}$	-0.3	-3.0	Vdc

ON CHARACTERISTICS

Zero-Gate-Voltage Drain Current ($V_{DS} = 15\ \text{Vdc}$, $V_{GS} = 0$)	I_{DSS}	1.0	5.0	mAdc
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SMALL-SIGNAL CHARACTERISTICS

Forward Transfer Admittance ($V_{DS} = 15\ \text{Vdc}$, $V_{GS} = 0$, $f = 1.0\ \text{kHz}$)	$ Y_{fs} $	3000	6000	μmhos
Output Admittance ($V_{DS} = 15\ \text{Vdc}$, $V_{GS} = 0$, $f = 1.0\ \text{kHz}$)	$ y_{os} $	-	50	μmhos
Input Capacitance ($V_{DS} = 15\ \text{Vdc}$, $V_{GS} = 0$, $f = 1.0\ \text{MHz}$)	C_{iss}	-	5.0	pF
Reverse Transfer Capacitance ($V_{DS} = 15\ \text{Vdc}$, $V_{GS} = 0$, $f = 10\ \text{MHz}$)	C_{rss}	-	1.0	pF
Output Capacitance ($V_{DS} = 15\ \text{Vdc}$, $V_{GS} = 0$, $f = 1.0\ \text{MHz}$)	C_{oss}	-	2.0	pF

COMMON SOURCE CHARACTERISTICS ADMITTANCE PARAMETERS

($V_{DS} = 15\ \text{Vdc}$, $T_{\text{channel}} = 25^\circ\text{C}$)

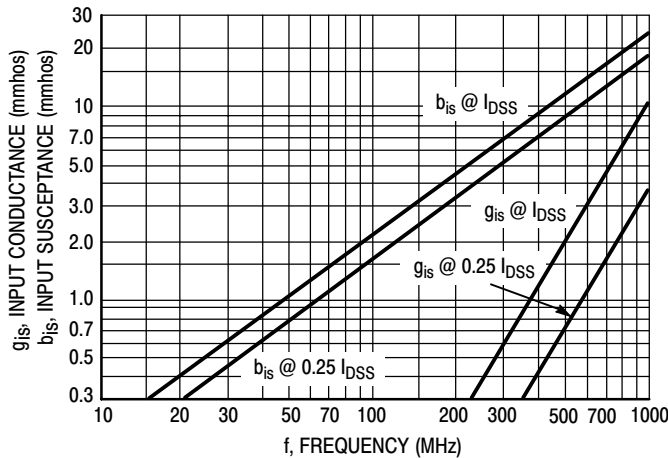


Figure 1. Input Admittance (y_{is})

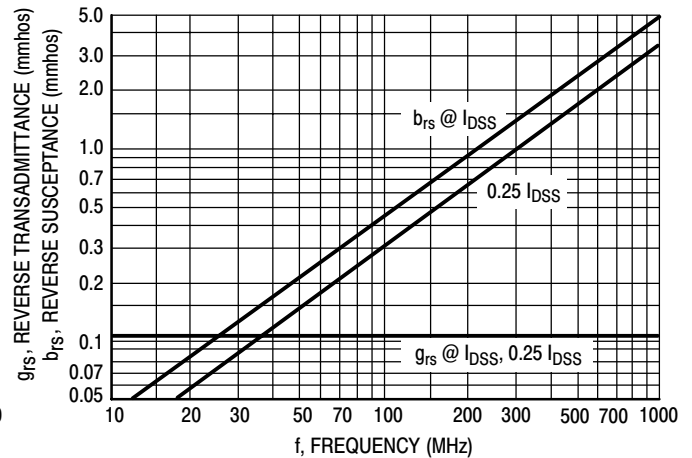


Figure 2. Reverse Transfer Admittance (y_{rs})

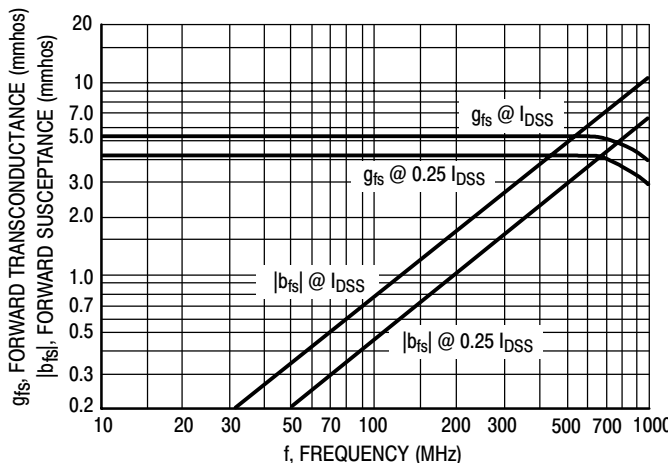


Figure 3. Forward Transadmittance (y_{fs})

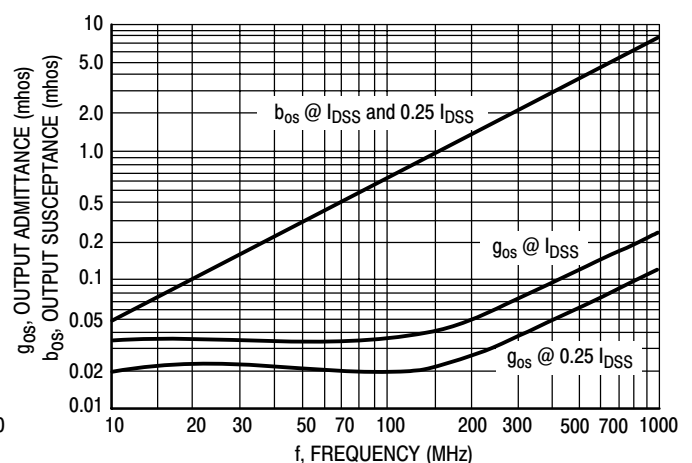


Figure 4. Output Admittance (y_{os})

COMMON SOURCE CHARACTERISTICS
S-PARAMETERS

($V_{DS} = 15$ Vdc, $T_{channel} = 25^\circ\text{C}$, Data Points in MHz)

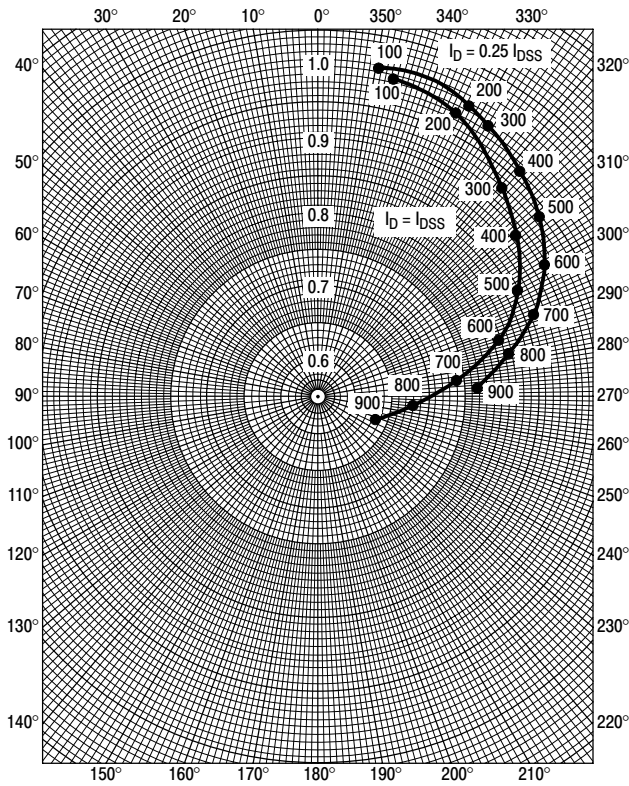


Figure 5. S_{11s}

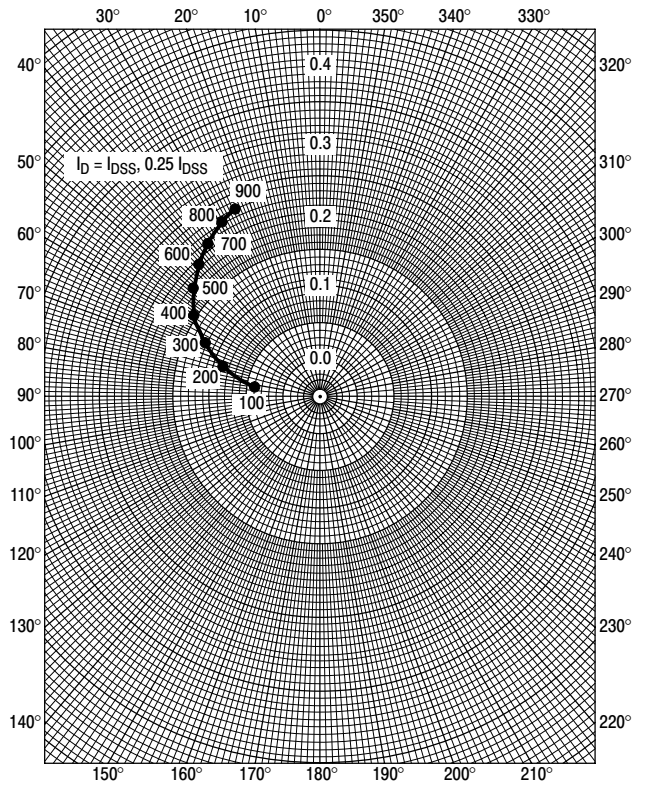


Figure 6. S_{12s}

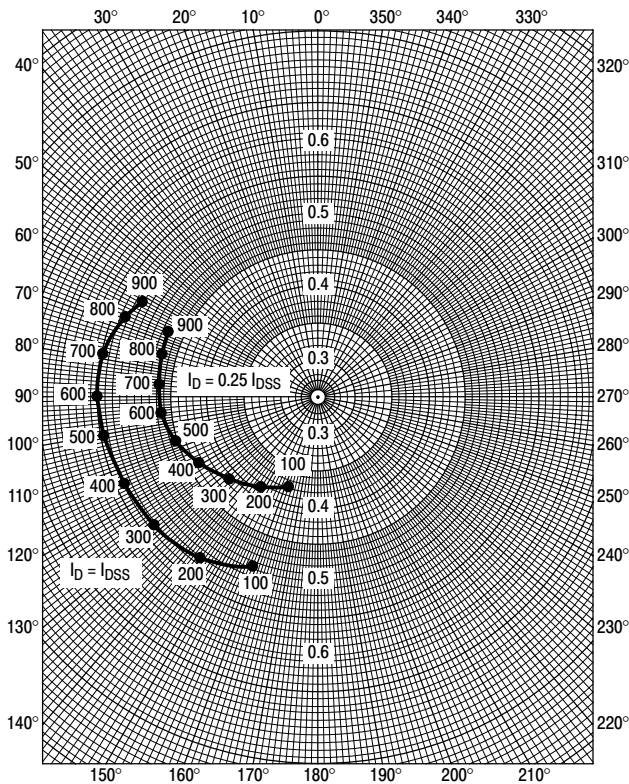


Figure 7. S_{21s}

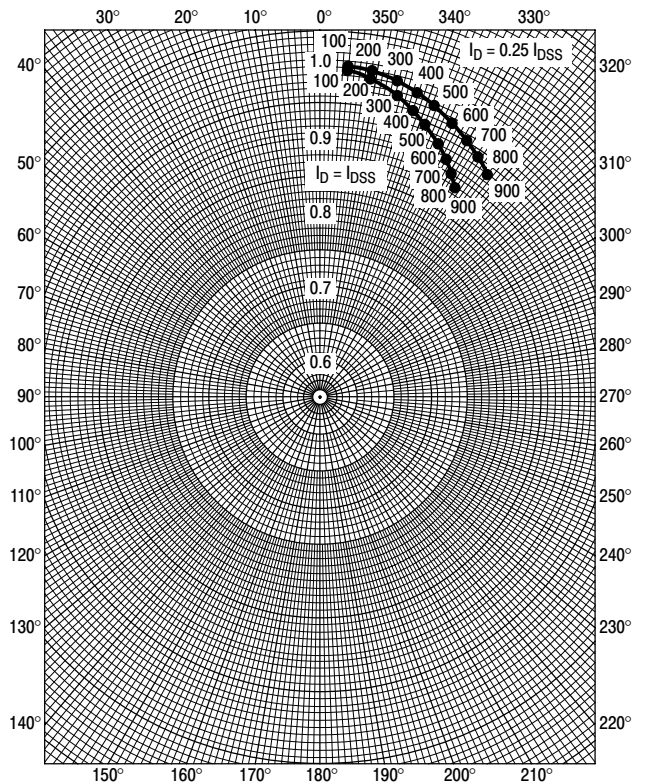


Figure 8. S_{22s}

COMMON GATE CHARACTERISTICS ADMITTANCE PARAMETERS

($V_{DG} = 15 \text{ Vdc}$, $T_{\text{channel}} = 25^\circ\text{C}$)

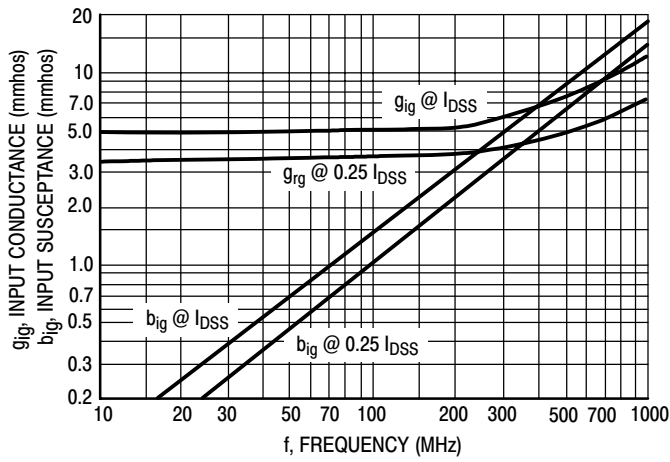


Figure 9. Input Admittance (y_{ig})

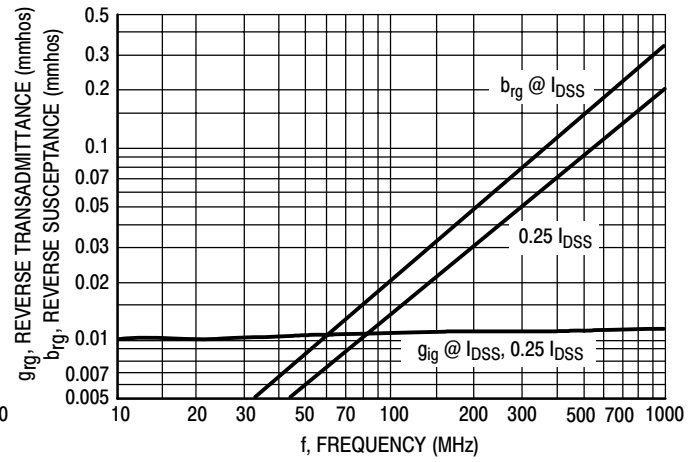


Figure 10. Reverse Transfer Admittance (y_{rg})

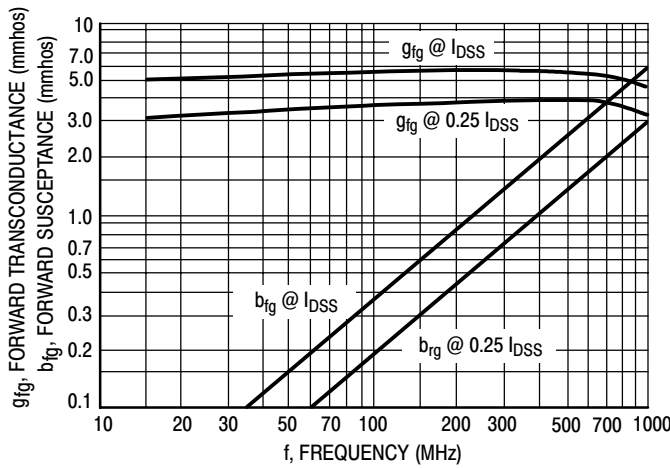


Figure 11. Forward Transfer Admittance (y_{fg})

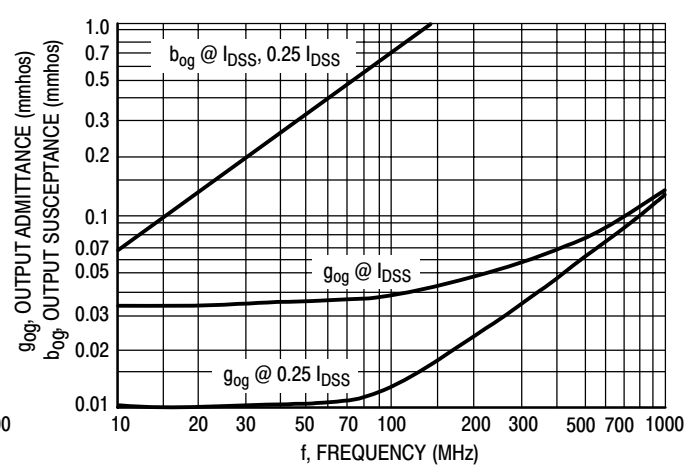


Figure 12. Output Admittance (y_{og})

COMMON GATE CHARACTERISTICS S-PARAMETERS

($V_{DS} = 15$ Vdc, $T_{channel} = 25^\circ\text{C}$, Data Points in MHz)

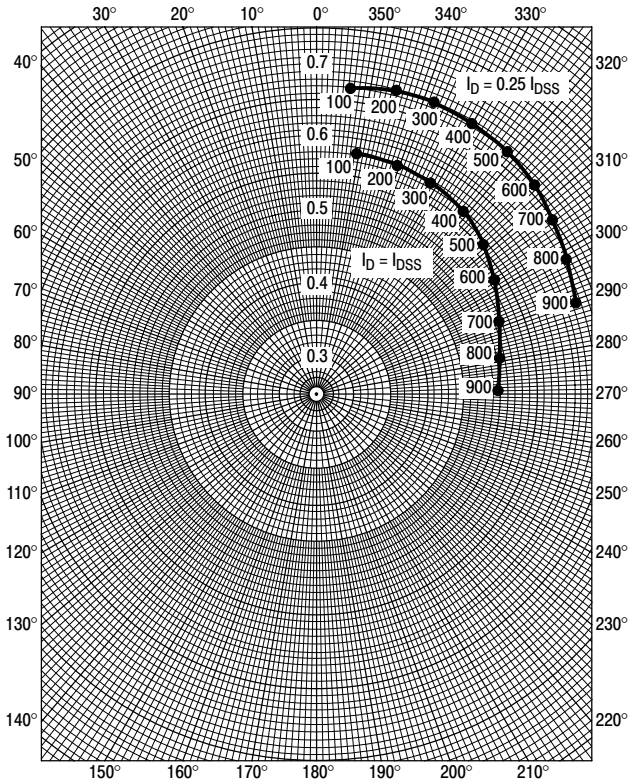


Figure 13. S_{11g}

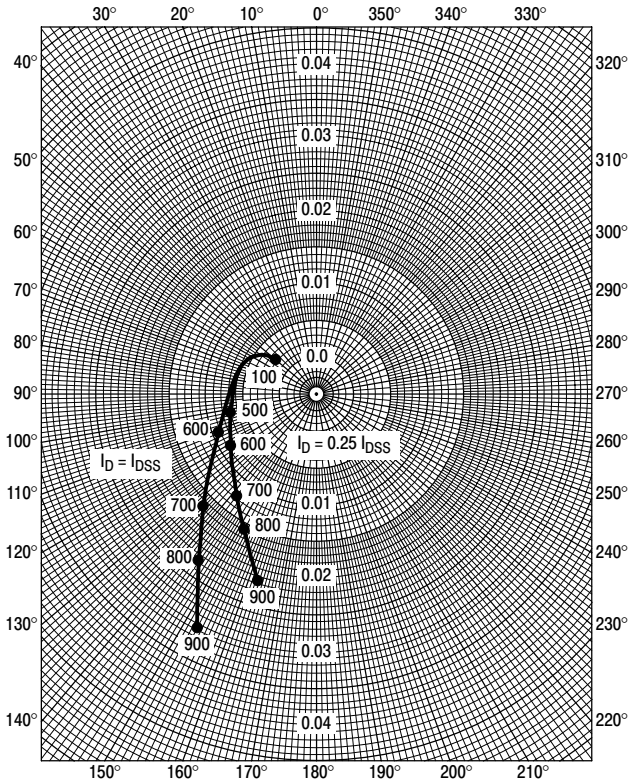


Figure 14. S_{12g}

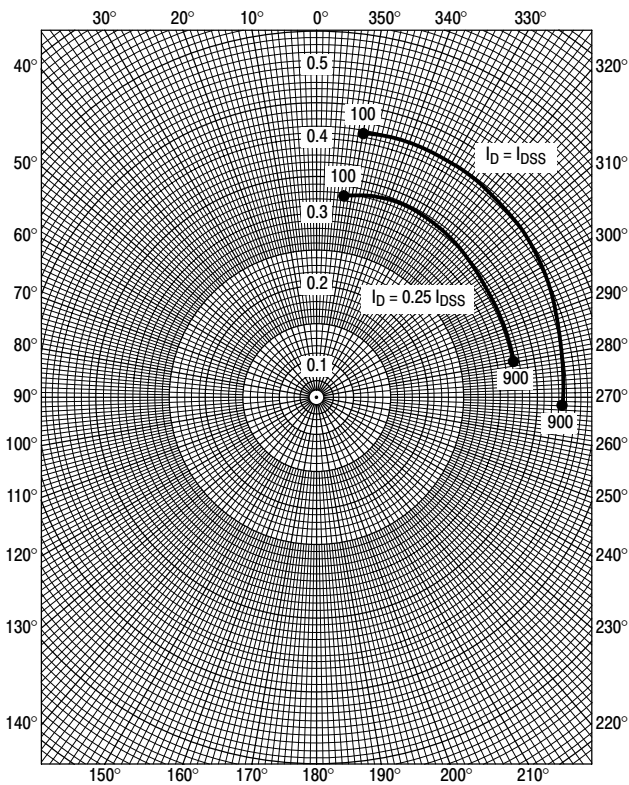


Figure 15. S_{21g}

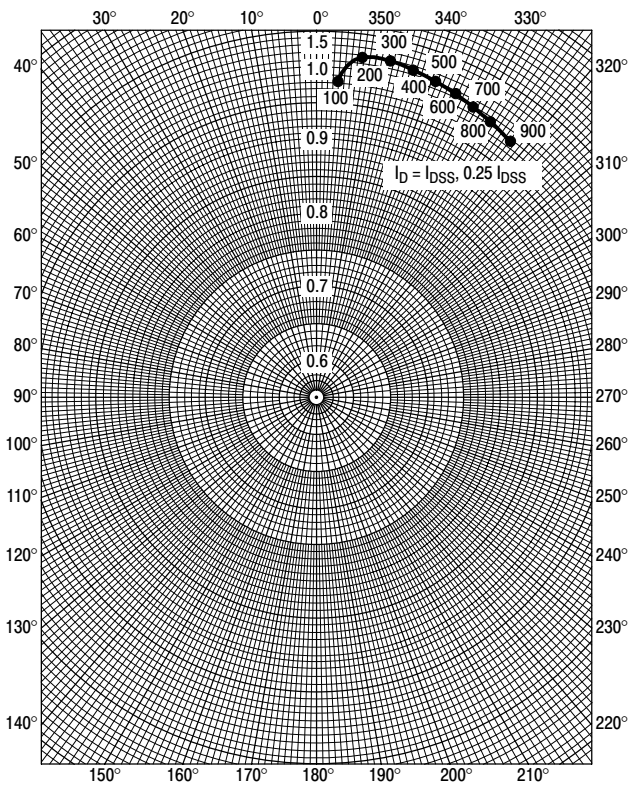


Figure 16. S_{22g}

MECHANICAL CASE OUTLINE PACKAGE DIMENSIONS



SCALE 4:1

SOT-23 (TO-236)
CASE 318
ISSUE AT

DATE 01 MAR 2023

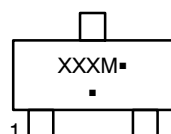


NOTES:

1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M,1994.
2. CONTROLLING DIMENSION: MILLIMETERS
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF THE BASE MATERIAL.
4. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH, PROTRUSIONS, OR GATE BURRS.

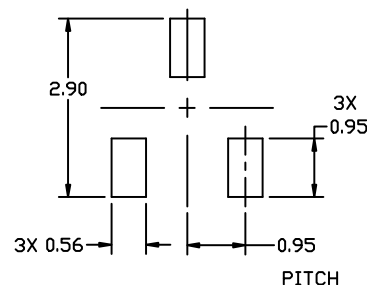
DIM	MILLIMETERS			INCHES		
	MIN.	NOM.	MAX.	MIN.	NOM.	MAX.
A	0.89	1.00	1.11	0.035	0.039	0.044
A1	0.01	0.06	0.10	0.000	0.002	0.004
b	0.37	0.44	0.50	0.015	0.017	0.020
c	0.08	0.14	0.20	0.003	0.006	0.008
D	2.80	2.90	3.04	0.110	0.114	0.120
E	1.20	1.30	1.40	0.047	0.051	0.055
e	1.78	1.90	2.04	0.070	0.075	0.080
L	0.30	0.43	0.55	0.012	0.017	0.022
L1	0.35	0.54	0.69	0.014	0.021	0.027
H _E	2.10	2.40	2.64	0.083	0.094	0.104
T	0°	---	10°	0°	---	10°

GENERIC MARKING DIAGRAM*



XXX = Specific Device Code
M = Date Code
▪ = 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.



RECOMMENDED MOUNTING FOOTPRINT

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

STYLES ON PAGE 2

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MECHANICAL CASE OUTLINE

PACKAGE DIMENSIONS



SOT-23 (TO-236) CASE 318 ISSUE AT

DATE 01 MAR 2023

STYLE 1 THRU 5: CANCELLED	STYLE 6: PIN 1. BASE 2. EMITTER 3. COLLECTOR	STYLE 7: PIN 1. EMITTER 2. BASE 3. COLLECTOR	STYLE 8: PIN 1. ANODE 2. NO CONNECTION 3. CATHODE		
STYLE 9: PIN 1. ANODE 2. ANODE 3. CATHODE	STYLE 10: PIN 1. DRAIN 2. SOURCE 3. GATE	STYLE 11: PIN 1. ANODE 2. CATHODE 3. CATHODE-ANODE	STYLE 12: PIN 1. CATHODE 2. CATHODE 3. ANODE	STYLE 13: PIN 1. SOURCE 2. DRAIN 3. GATE	STYLE 14: PIN 1. CATHODE 2. GATE 3. ANODE
STYLE 15: PIN 1. GATE 2. CATHODE 3. ANODE	STYLE 16: PIN 1. ANODE 2. CATHODE 3. CATHODE	STYLE 17: PIN 1. NO CONNECTION 2. ANODE 3. CATHODE	STYLE 18: PIN 1. NO CONNECTION 2. CATHODE 3. ANODE	STYLE 19: PIN 1. CATHODE 2. ANODE 3. CATHODE-ANODE	STYLE 20: PIN 1. CATHODE 2. ANODE 3. GATE
STYLE 21: PIN 1. GATE 2. SOURCE 3. DRAIN	STYLE 22: PIN 1. RETURN 2. OUTPUT 3. INPUT	STYLE 23: PIN 1. ANODE 2. ANODE 3. CATHODE	STYLE 24: PIN 1. GATE 2. DRAIN 3. SOURCE	STYLE 25: PIN 1. ANODE 2. CATHODE 3. GATE	STYLE 26: PIN 1. CATHODE 2. ANODE 3. NO CONNECTION
STYLE 27: PIN 1. CATHODE 2. CATHODE 3. CATHODE	STYLE 28: PIN 1. ANODE 2. ANODE 3. ANODE				

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