




**SPECIFICATION SHEET**

<b>SPECIFICATION SHEET NO.</b>	N0729-SOT893L0D882GR
<b>DATE</b>	July 29, 2021
<b>REVISION</b>	A0
<b>DESCRIPTION</b>	SMD Plastic-Encapsulate Transistors, SOT-89-3L series, 3 pads D882-GR Type, Complementary NPN Collector Power Dissipation 500mW. Collector Current 3A Max. Operating Temp. Range -55°C ~+150°C, Package in Tape/Reel, 1000pcs/Reel RoHS/RoHS III compliant
<b>CUSTOMER</b>	
<b>CUSTOMER PART NUMBER</b>	
<b>CROSS REF. PART NUMBER</b>	
<b>ORIGINAL PART NUMBER</b>	MDD D882- GR
<b>PART CODE</b>	SOT893L0D882GR

<b>VENDOR APPROVE</b>			
Issued/Checked/Approved			
DATE: July 29, 2021			

<b>CUSTOMER APPROVE</b>	
DATE:	

**SMD PLASTIC-ENCAPULATE TRANSISTORS SOT-89-3L SERIES**

**MAIN FEATURE**

- Epitaxial planar die construction
- Complementary NPN
- Collector Power Dissipation 500mW
- Collector Current 3A.



**APPLICATION**

- For printed circuit board

**RFQ**  
Request For Quotation

**PART CODE GUIDE**

SOT893L	0	D882	GR
1	2	3	4

- 1) **SOT893L**: SMD Plastic-Encapsulate Transistors, 3 pads SOT-89-3L series Code
- 2) **0**: Internal control code, 1 digits or letter
- 3) **D882**: Type Code for original part number D882
- 4) **GR**: Classification and rank code for DC current Gain Max. range 200~400

**SMD PLASTIC-ENCAPULATE TRANSISTORS SOT-89-3L SERIES**

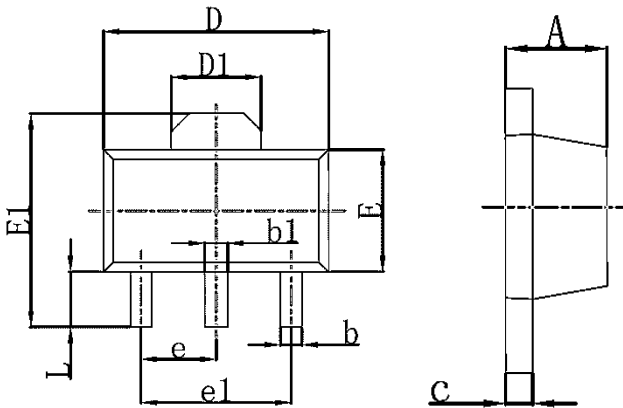
DIMENSION (Unit: Inch/mm)

Image for reference



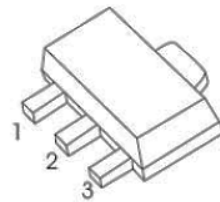
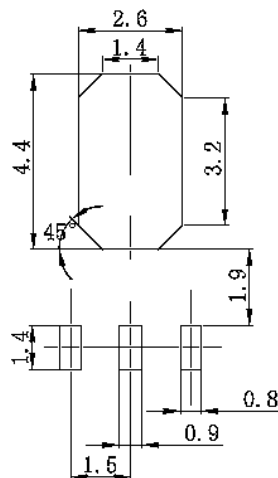
Marking: D882

SOT-89-3L



Symbol	Value ( mm )		
	Min.	Typ.	Max.
A	1.4		1.6
b	0.32		0.52
b1	0.40		0.58
c	0.35		0.44
D	4.4		4.6
E	2.3		2.60
E1	3.94		4.25
e		1.5	
e1		3.0	
L	0.90		1.20

Recommend Pad Layout  
(unit: mm +/-0.05)



Pin 1: Base  
Pin 2: Collect  
Pin 3: Emitter

**SMD PLASTIC-ENCAPULATE TRANSISTORS SOT-89-3L SERIES**

**MECHANICAL DATA**

Case	Terminals	Polarity	Mounting Position	Weight per piece
JEDEC SOT-89-3L molded plastic body	Solder plated, Solderable per MIL-STD-750, Method 2026	Polarity symbol marking on case	Any	n/a

**MAX. RATINGS AT Ta=25 °C**

Parameter	SYMBOLS	VALUE	UNITS
		LIMIT	
Collector-Base Voltage	V <sub>CBO</sub>	40	Volts
Collector-Emitter Voltage	V <sub>CEO</sub>	30	Volts
Emitter-Base Voltage	V <sub>EBO</sub>	6	Volts
Collector Current	I <sub>C</sub>	300	mA
Collector Power Dissipation	P <sub>C</sub>	500	mW
Thermal Resistance Junction to Ambient	R <sub>QJA</sub>	250	°C/W
Junction temperature	T <sub>J</sub>	+150	°C
Storage temperature range	T <sub>STG</sub>	-55 ~ +150	°C

**SMD PLASTIC-ENCAPULATE TRANSISTORS SOT-89-3L SERIES**
**ELECTRICAL CHARACTERISTICS AT Ta= 25 °C**

Parameter	SYMBOLS	VALUE			UNIT	Condition
		Min.	Typ.	Max.		
Collector-base breakdown voltage	V(BR)CBO	40			V	Ic= 100μA, IE=0
Collector-emitter breakdown voltage	V(BR)CEO	30			V	Ic= 1mA, IB=0
Emitter-base breakdown voltage	V(BR)EBO	6			V	IE=100μA, IC=0
Collector cut-off current	I CBO			1	μA	V <sub>CB</sub> =40V, I <sub>E</sub> =0
Collector cut-off current	I CEO			10	μA	V <sub>CE</sub> =30V, I <sub>B</sub> =0
Emitter cut-off current	I EBO			1	μA	V <sub>EB</sub> = 6V, I <sub>C</sub> =0
DC Current gain	h FE(1)	30	150			V <sub>CE</sub> =2V, I <sub>C</sub> = 0.2A
	h FE(2)	60	160	400		V <sub>CE</sub> =2V, I <sub>C</sub> = 1A
Collector-emitter saturation voltage	V CE(sat)		0.3	0.5	V	I <sub>C</sub> =2A, I <sub>B</sub> = 0.2A
Base-emitter saturation voltage	V BE(sat)		1	2	V	I <sub>C</sub> =2A, I <sub>B</sub> = 0.2A
Transition frequency	f T		90		MHz	V <sub>CE</sub> =5V, I <sub>C</sub> = 0.1A, f=10MHz
Collector Output Capacitance	C ob		45		pF	V <sub>CB</sub> =10V, I <sub>C</sub> = 0 f=1MHz

**CLASSIFICATION OF hFE**

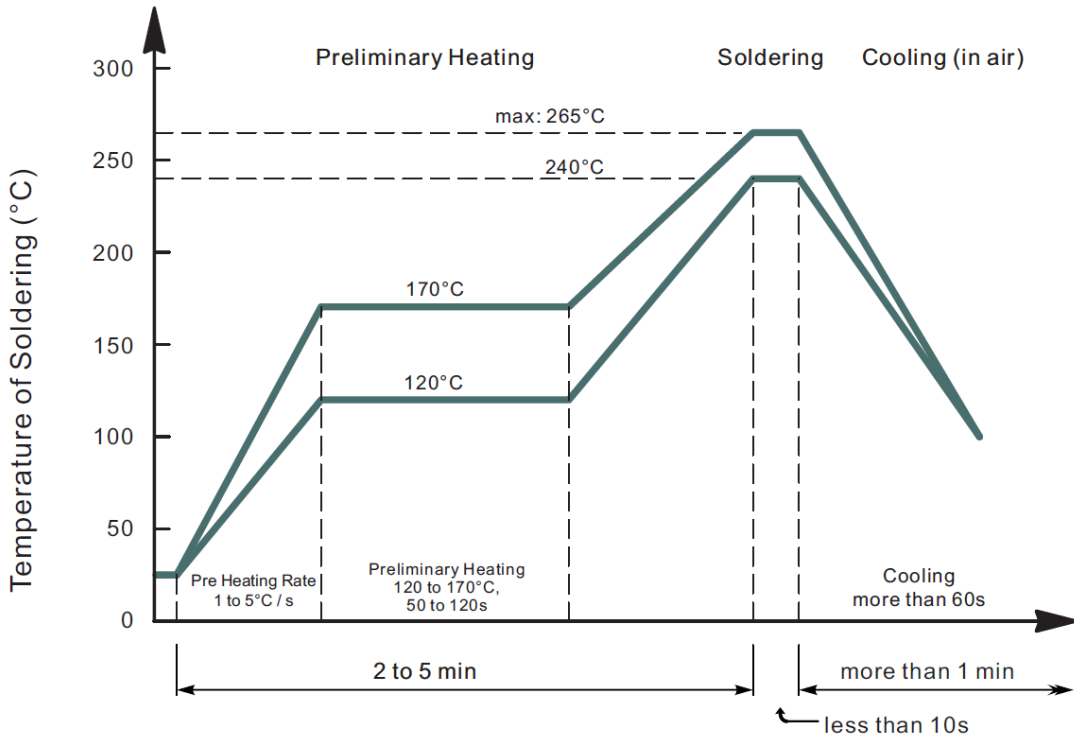
Rank	R	O	Y	GR
Range	60 ~ 120	100~200	160~320	200 ~ 400

**SMD PLASTIC-ENCCAPULATE TRANSISTORS SOT-89-3L SERIES**
**RELIABILITY**

Number	Experiment Items	Experiment Method And Conditions	Reference Documents
1	Solder Resistance Test	Test 260°C± 5°C for 10 ± 2 sec. Immerse body into solder 1/16" ± 1/32"	MIL-STD-750D METHOD-2031.2
2	Solderability Test	230°C ±5°C for 5 sec.	MIL-STD-750D METHOD-2026.1 0
3	Pull Test	1 kg in axial lead direction for 10 sec.	MIL-STD-750D METHOD-2036.4
4	Bend Test	0.5Kg Weight Applied To Each Lead, Bending Arcs 90 °C ± 5 °C For 3 Times	MIL-STD-750D METHOD-2036.4
5	High Temperature Reverse Bias Test	TA=100°C for 1000 Hours at VR=80% Rated VR	MIL-STD-750D METHOD-1038.4
6	Forward Operation Life Test	TA=25°C Rated Average Rectified Current	MIL-STD-750D METHOD-1027.3
7	Intermittent Operation Life Test	On state: 5 min with rated IRMS Power Off state: 5 min with Cool Forced Air. On and off for 1000 cycles.	MIL-STD-750D METHOD-1036.3
8	Pressure Cooker Test	15 PSIG, TA=121°C, 4 hours	MIL-S-19500 APPENOIXC
9	Temperature Cycling Test	-55°C~+125°C; 30 Minutes For Dwelled Time 5 minutes for transferred time. Total: 10 cycles.	MIL-STD-750D METHOD-1051.7
10	Thermal Shock Test	0°C for 5 minutes., 100°C for 5minutes, Total: 10 cycles	MIL-STD-750D METHOD-1056.7
11	Forward Surge Test	8.3ms Single Sale Sine-wave One Surge.	MIL-STD-750D METHOD-4066.4
12	Humidity Test	TA=65°C, RH=98% for 1000 hours.	MIL-STD-750D METHOD-1021.3
13	High Temperature Storage life Test	150°C for 1000 Hours	MIL-STD-750D METHOD-1031.5

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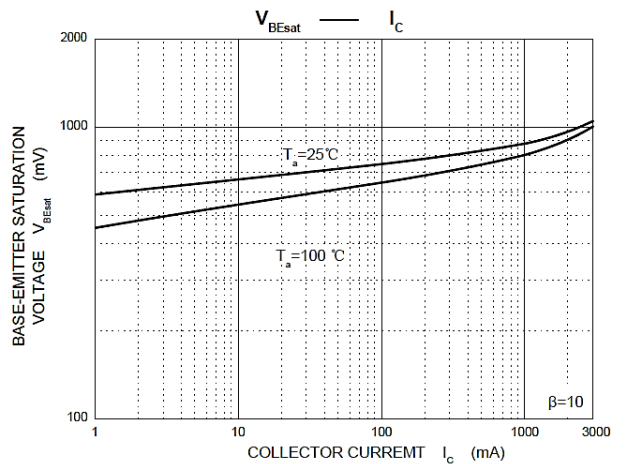
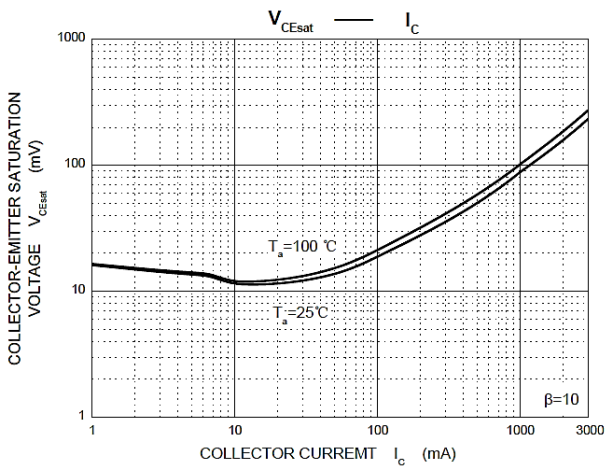
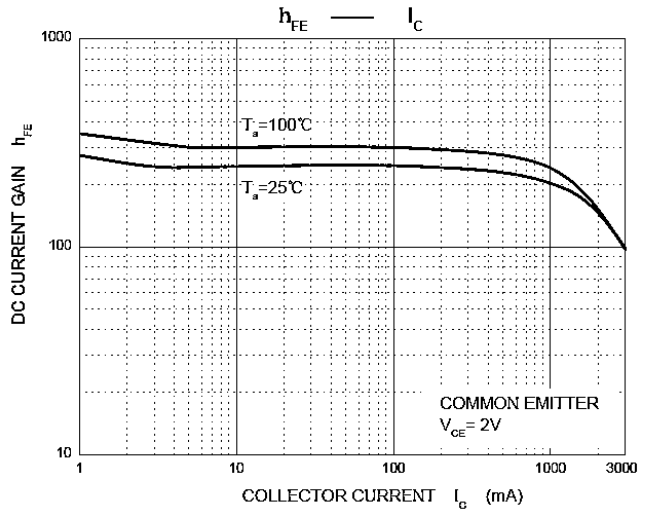
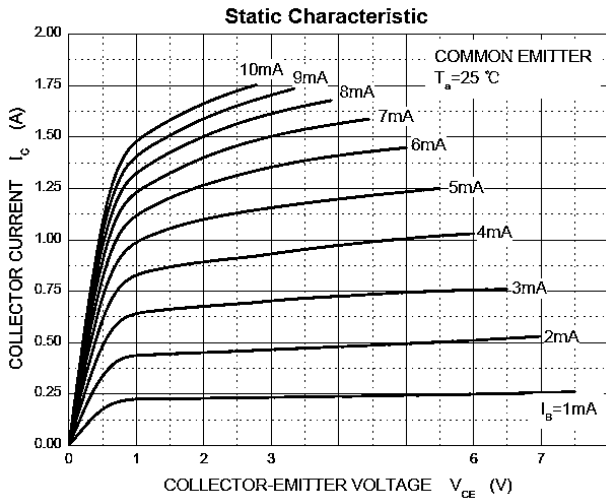
**SUGGESTED REFLOW PROFILE (For Reference Only)**



- Recommended peak temperature is over 245°C, If peak temperature is below 245 °C, you may adjust the following parameters; time length of peak temperature (longer), time length of soldering (longer), thickness of solder paste (thicker)
- Welding shall not exceed 2 times
- Remark: lead free solder paste (96.5 sn/3.0 Ag/0.5Cu)

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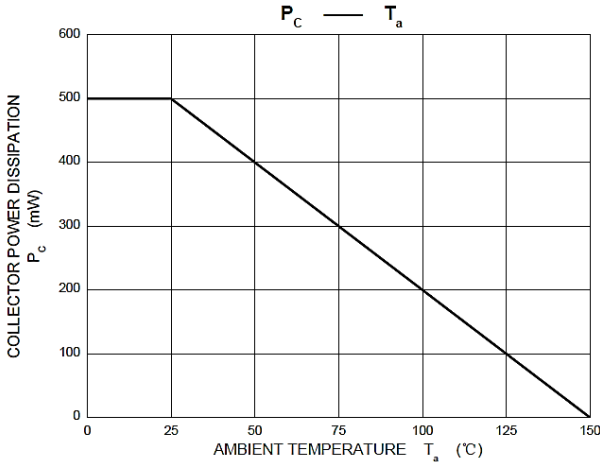
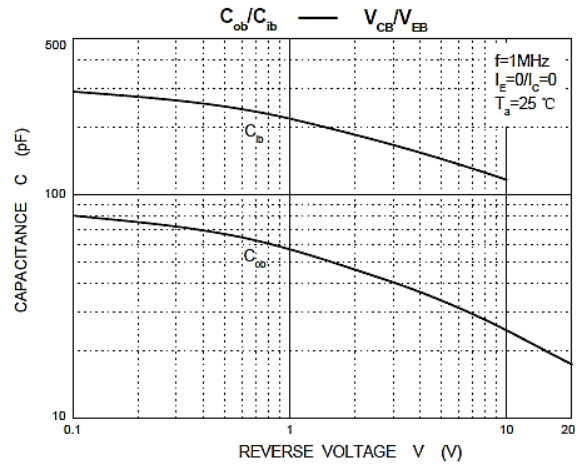
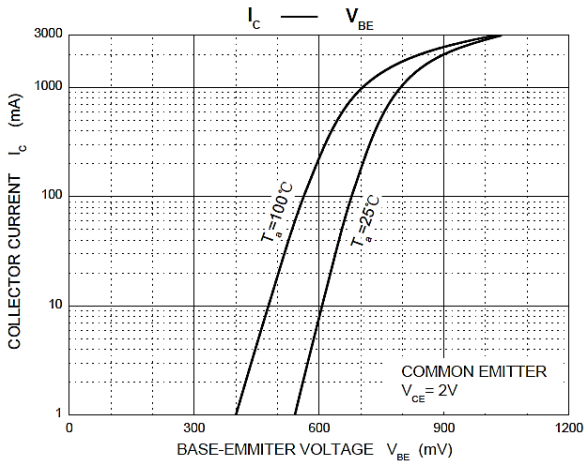
**RATINGS AND CHARACTERISTIC CURVES (For Reference Only)**





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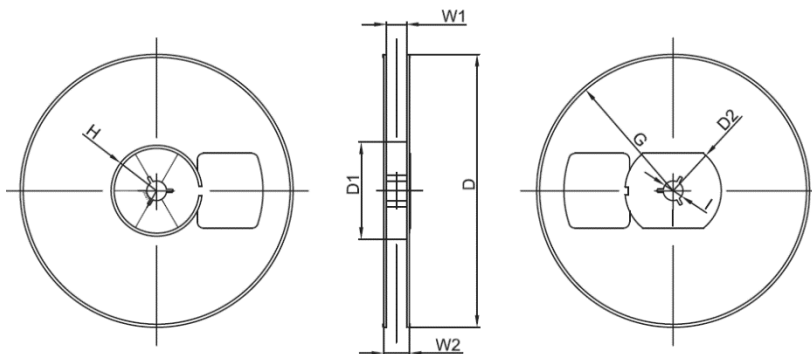
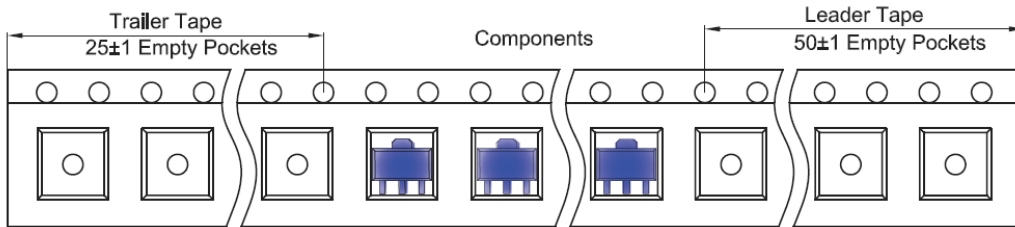
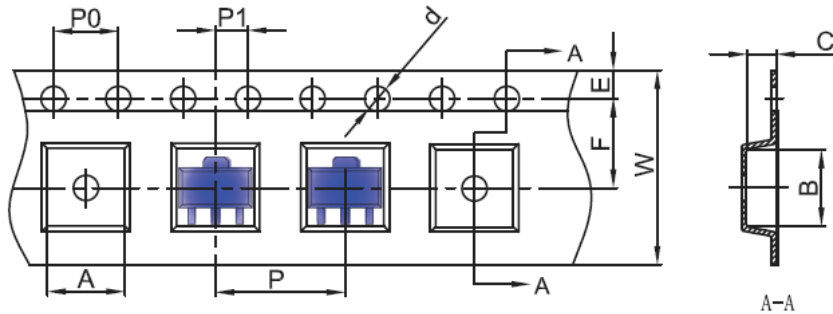
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**SMD PLASTIC-ENCCAPULATE TRANSISTORS SOT-89-3L SERIES**

**TAPE/REEL (Unit: mm)**

All Devices are packed in accordance with EIA standard RS-481-A and specifications.

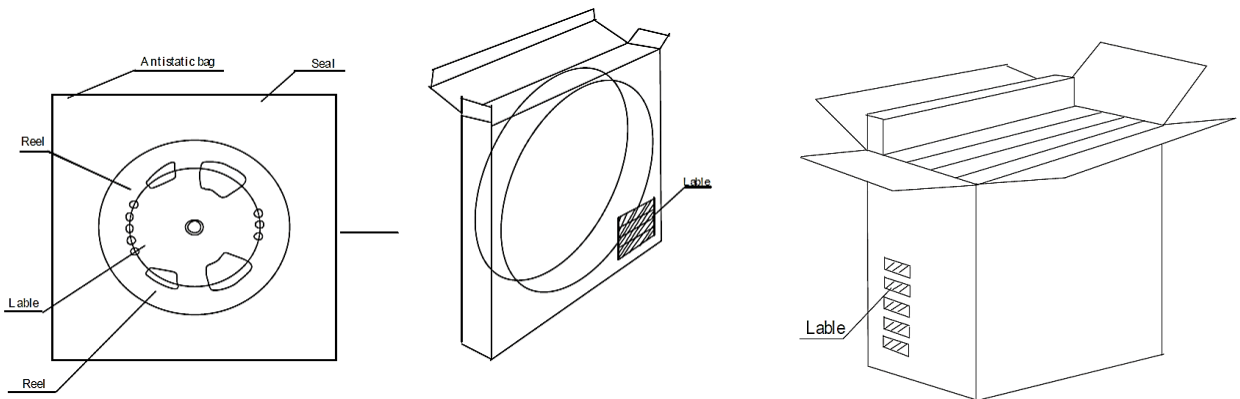


Symbol	Dimension (mm)
A	4.85
B	4.45
C	1.85
d	φ1.50
E	1.75
F	5.50
P 0	4.00
P	8.00
P 1	2.00
W	12.00
D	φ180
D1	60.0
D2	R32.0
G	R86.50
H	R30.00
I	φ13.0
W 1	13.20
W2	16.50

**SMD PLASTIC-ENCAPULATE TRANSISTORS SOT-89-3L SERIES**

**PACKAGE**

Case Code	Reel Size	MPQ (pcs)	Component Spacing (mm)	Qty. Per Box (pcs)	Inner Box L*W*H (mm)	Reel Size (mm)	Carton size L*W*H (mm)	Qty. Per Carton (pcs)	G. W (kg)
SOT-89-3L	7"	1,000		15,000	203*203*195	178	438*438*220	40,000	7.0



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