NEW PRODUCT

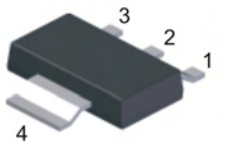
DPLS315E

LOW $V_{CE(SAT)}$ PNP SURFACE MOUNT TRANSISTOR

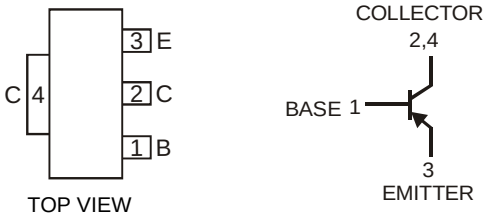
Please click here to visit our online spice models database.

Features

- Epitaxial Planar Die Construction
- Low Collector-Emitter Saturation Resistance $R_{CE(SAT)}$ = 70mΩ at 3A
- High DC Current Gain h_{FE} > 300 at I_C = 2A
- Complementary NPN Type Available (DNLS412E)
- Ideally Suited for Automated Assembly Processes
- Ideal for Medium Power Switching or Amplification Applications
- **Lead Free By Design/RoHS Compliant (Note 1)**
- **"Green" Device (Note 2)**



SOT-223



Schematic and Pin Configuration

Mechanical Data

- Case: SOT-223
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020D
- Terminals: Finish – Matte Tin annealed over Copper Leadframe (Lead Free Plating). Solderable per MIL-STD-202, Method 208
- Marking Information: See Page 3
- Ordering Information: See Page 3
- Weight: 0.112 grams (approximate)

Maximum Ratings @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	-15	V
Collector-Emitter Voltage	V_{CEO}	-15	V
Emitter-Base Voltage	V_{EBO}	-5	V
Continuous Collector Current	I_C	-3	A
Peak Pulse Current	I_{CM}	-8	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation @ T_A = 25°C (Note 3)	P_D	1	W
Thermal Resistance, Junction to Ambient Air (Note 1) @T_A = 25°C	$R_{\theta JA}$	125	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	°C

Notes:
1. No purposefully added lead.
2. Diodes Inc.'s "Green" policy can be found on our website at http://www.diodes.com/products/lead_free/index.php.
3. Device mounted on FR-4 PCB, pad layout as shown on page 4 or in Diodes Inc. suggested pad layout document AP02001, which can be found on our website at http://www.diodes.com/datasheets/ap02001.pdf.

© Diodes Incorporated

NEW PRODUCT

Electrical Characteristics @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
OFF CHARACTERISTICS (Note 4)						
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	-15	—	—	V	I_C = -100μA, I_E = 0
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	-15	—	—	V	I_C = -10mA, I_B = 0
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	-5	—	—	V	I_E = -100μA, I_C = 0
Collector Cutoff Current	I_{CBO}	—	—	-0.1	μA	V_{CB} = -10V, I_E = 0
Emitter Cutoff Current	I_{EBO}	—	—	-0.1	μA	V_{EB} = -4V, I_C = 0
ON CHARACTERISTICS (Note 4)						
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	—	-0.08 -0.12 -0.22 -0.21	-0.15 -0.25 -0.45 -0.5	V	I_C = -0.5A, I_B = -2.5mA I_C = -1A, I_B = -5mA I_C = -2A, I_B = -10mA I_C = -3A, I_B = -50mA
Base-Emitter Saturation Voltage	$V_{BE(SAT)}$	—	—	-0.9	V	I_C = -1A, I_B = -5mA
Base-Emitter Turn-On Voltage	$V_{BE(ON)}$	—	-0.75	—	V	V_{CE} = -2V, I_C = -1A
DC Current Gain	h_{FE}	500 400 300 150	— — — —	1500 — — —	—	V_{CE} = -2V, I_C = -10mA V_{CE} = -2V, I_C = -1A V_{CE} = -2V, I_C = -2A V_{CE} = -2V, I_C = -6A
AC CHARACTERISTICS						
Transition Frequency	f_T	100	—	—	MHz	V_{CE} = -5V, I_C = -50mA, f = 50MHz
Input Capacitance	C_{ibo}	—	245	—	MHz	V_{EB} = -0.5V, f = 1MHz
Output Capacitance	C_{obo}	—	45	—	pF	V_{CB} = -10V, f = 1MHz
Switching Times	t_{on} t_{off}	— —	35 200	— —	ns ns	V_{CC} = -10V, I_C = -500mA, I_{B1} = -I_{B2} = -50mA

Notes: 4. Pulse Test: Pulse width ≤300μs. Duty cycle ≤2.0%.

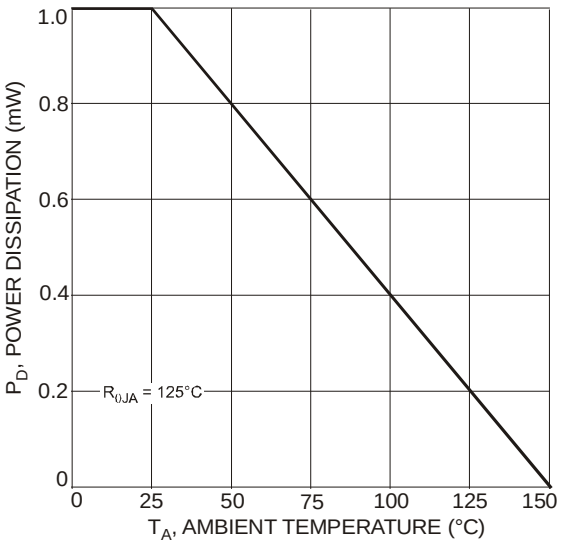


Fig. 1 Max Power Dissipation vs. Ambient Temperature

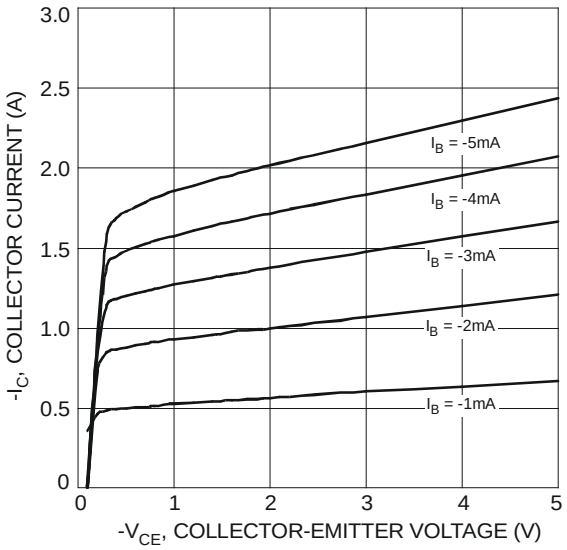


Fig. 2 Typical Collector Current vs. Collector-Emitter Voltage

© Diodes Incorporated

NEW PRODUCT

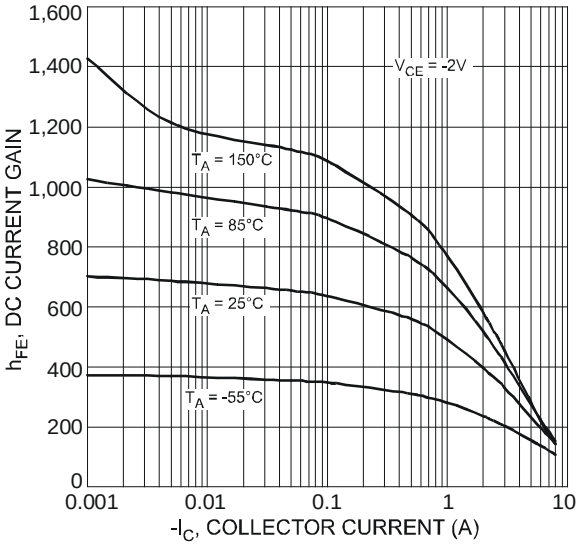


Fig. 3 Typical DC Current Gain vs. Collector Current

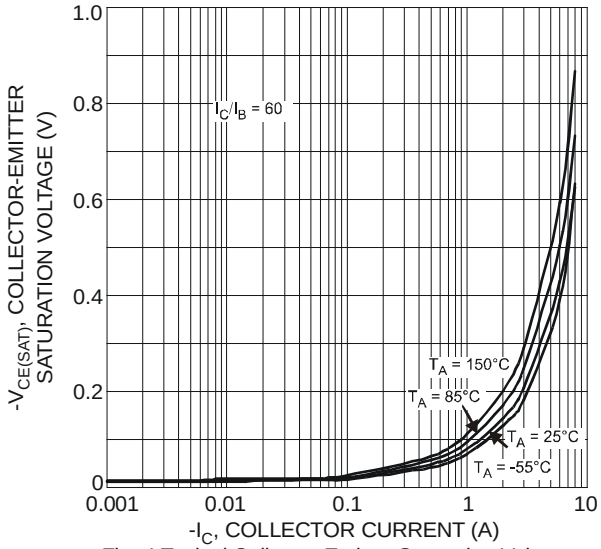


Fig. 4 Typical Collector-Emitter Saturation Voltage vs. Collector Current

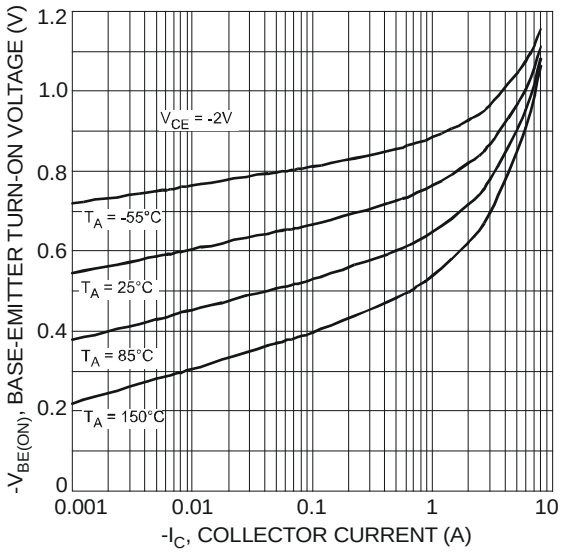


Fig. 5 Typical Base-Emitter Turn-On Voltage vs. Collector Current

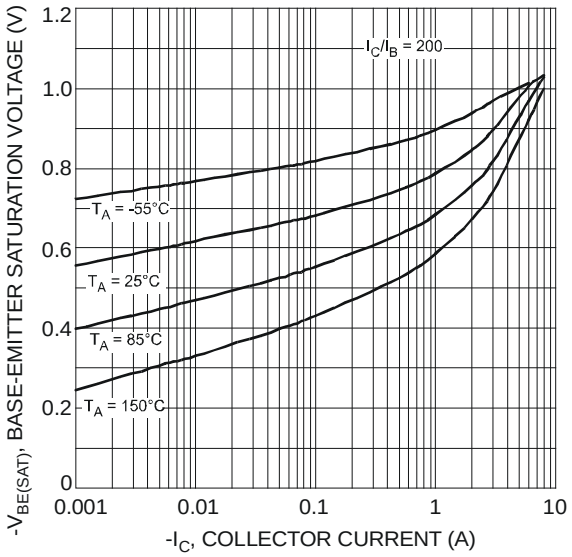


Fig. 6 Typical Base-Emitter Saturation Voltage vs. Collector Current

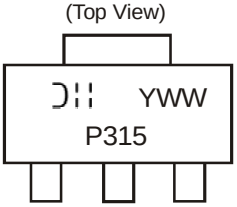
Ordering Information (Note 5)

Device	Packaging	Shipping
DPLS315E-13	SOT-223	2500/Tape & Reel

Notes: 5. For packaging details, please go to our website at http://www.diodes.com/ap02007.pdf.

Marking Information

(Top View)

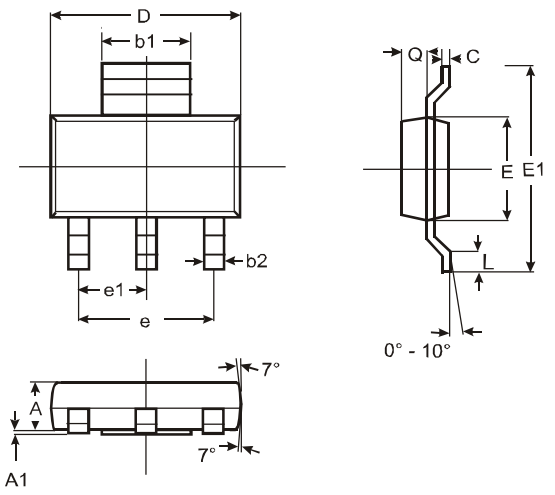


P315 = Product Type Marking Code
YWW = Date Code Marking
Y = Last digit of year ex: 7 = 2007
WW = Week code 01 - 52

© Diodes Incorporated

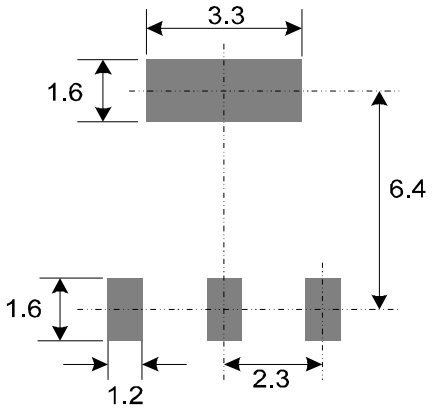
NEW PRODUCT

Package Outline Dimensions



SOT-223			
Dim	**Min**	**Max**	**Typ**
A	1.55	1.65	1.60
A1	0.010	0.15	0.05
b1	2.90	3.10	3.00
b2	0.60	0.80	0.70
C	0.20	0.30	0.25
D	6.45	6.55	6.50
E	3.45	3.55	3.50
E1	6.90	7.10	7.00
e	—	—	4.60
e1	—	—	2.30
L	0.85	1.05	0.95
Q	0.84	0.94	0.89
All Dimensions in mm			

Suggested Pad Layout



(Unit:mm)

IMPORTANT NOTICE

Diodes Incorporated and its subsidiaries reserve the right to make modifications, enhancements, improvements, corrections or other changes without further notice to any product herein. Diodes Incorporated does not assume any liability arising out of the application or use of any product described herein; neither does it convey any license under its patent rights, nor the rights of others. The user of products in such applications shall assume all risks of such use and will agree to hold Diodes Incorporated and all the companies whose products are represented on our website, harmless against all damages.

LIFE SUPPORT

Diodes Incorporated products are not authorized for use as critical components in life support devices or systems without the expressed written approval of the President of Diodes Incorporated.

© Diodes Incorporated