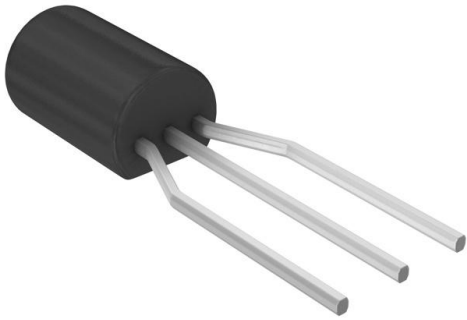


MPSW63RLRA Datasheet

www.digi-electronics.com



<https://www.DiGi-Electronics.com>

DiGi Electronics Part Number	MPSW63RLRA-DG
Manufacturer	onsemi
Manufacturer Product Number	MPSW63RLRA
Description	TRANS PNP DARL 30V 0.5A TO92
Detailed Description	Bipolar (BJT) Transistor PNP - Darlington 30 V 500 mA 125MHz 1 W Through Hole TO-92 (TO-226)



Tel: +00 852-30501935

RFQ Email: Info@DiGi-Electronics.com

DiGi is a global authorized distributor of electronic components.

Purchase and inquiry

Manufacturer Product Number:

MPSW63RLRA

Series:

-

Transistor Type:

PNP - Darlington

Voltage - Collector Emitter Breakdown (Max):

30 V

Current - Collector Cutoff (Max):

100nA (ICBO)

Power - Max:

1 W

Operating Temperature:

-55°C ~ 150°C (TJ)

Package / Case:

TO-226-3, TO-92-3 Long Body (Formed Leads)

Base Product Number:

MPSW63

Manufacturer:

onsemi

Product Status:

Obsolete

Current - Collector (Ic) (Max):

500 mA

Vce Saturation (Max) @ Ib, Ic:

1.5V @ 100µA, 100mA

DC Current Gain (hFE) (Min) @ Ic, Vce:

10000 @ 100mA, 5V

Frequency - Transition:

125MHz

Mounting Type:

Through Hole

Supplier Device Package:

TO-92 (TO-226)

Environmental & Export classification

RoHS Status:

RoHS non-compliant

REACH Status:

REACH Unaffected

HTSUS:

8541.29.0075

Moisture Sensitivity Level (MSL):

1 (Unlimited)

ECCN:

EAR99

ON Semiconductor

Is Now

The logo for onsemi, featuring the word "onsemi" in a dark teal, lowercase, sans-serif font. The letter "i" is stylized with a white dot and a teal vertical bar. A small orange triangle is positioned above the top right of the "i". A trademark symbol (TM) is located to the right of the logo.

To learn more about onsemi™, please visit our website at
www.onsemi.com

onsemi and **onsemi** and other names, marks, and brands are registered and/or common law trademarks of Semiconductor Components Industries, LLC dba "**onsemi**" or its affiliates and/or subsidiaries in the United States and/or other countries. **onsemi** owns the rights to a number of patents, trademarks, copyrights, trade secrets, and other intellectual property. A listing of **onsemi** product/patent coverage may be accessed at www.onsemi.com/site/pdf/Patent-Marking.pdf. **onsemi** reserves the right to make changes at any time to any products or information herein, without notice. The information herein is provided "as-is" and **onsemi** makes no warranty, representation or guarantee regarding the accuracy of the information, product features, availability, functionality, or suitability of its products for any particular purpose, nor does **onsemi** assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. Buyer is responsible for its products and applications using **onsemi** products, including compliance with all laws, regulations and safety requirements or standards, regardless of any support or applications information provided by **onsemi**. "Typical" parameters which may be provided in **onsemi** data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. **onsemi** does not convey any license under any of its intellectual property rights nor the rights of others. **onsemi** products are not designed, intended, or authorized for use as a critical component in life support systems or any FDA Class 3 medical devices or medical devices with a same or similar classification in a foreign jurisdiction or any devices intended for implantation in the human body. Should Buyer purchase or use **onsemi** products for any such unintended or unauthorized application, Buyer shall indemnify and hold **onsemi** and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that **onsemi** was negligent regarding the design or manufacture of the part. **onsemi** is an Equal Opportunity/Affirmative Action Employer. This literature is subject to all applicable copyright laws and is not for resale in any manner. Other names and brands may be claimed as the property of others.



One Watt Darlington Transistors

PNP Silicon

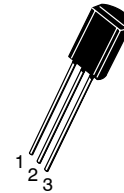
MPSW63 MPSW64*

*ON Semiconductor Preferred Device

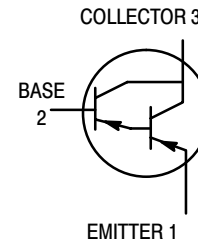
- These devices are available in Pb-free package(s). Specifications herein apply to both standard and Pb-free devices. Please see our website at www.onsemi.com for specific Pb-free orderable part numbers, or contact your local ON Semiconductor sales office or representative.

MAXIMUM RATINGS

Rating	Symbol	MPSW63 MPSW64	Unit
Collector–Emitter Voltage	V_{CES}	-30	Vdc
Collector–Base Voltage	V_{CBO}	-30	Vdc
Emitter–Base Voltage	V_{EBO}	-10	Vdc
Collector Current — Continuous	I_C	-500	mAdc
Total Device Dissipation @ $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	1.0 8.0	Watt mW/ $^\circ\text{C}$
Total Device Dissipation @ $T_C = 25^\circ\text{C}$ Derate above 25°C	P_D	2.5 20	Watts mW/ $^\circ\text{C}$
Operating and Storage Junction Temperature Range	T_J, T_{stg}	-55 to +150	$^\circ\text{C}$



CASE 29-10, STYLE 1
TO-92 (TO-226AE)



THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	125	$^\circ\text{C}/\text{W}$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	50	$^\circ\text{C}/\text{W}$

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

Characteristic	Symbol	Min	Max	Unit
----------------	--------	-----	-----	------

OFF CHARACTERISTICS

Collector–Emitter Breakdown Voltage ($I_C = -100 \mu\text{Adc}$, $V_{BE} = 0$)	$V_{(BR)CES}$	-30	—	Vdc
Collector Cutoff Current ($V_{CB} = -30 \text{ Vdc}$, $I_E = 0$)	I_{CBO}	—	-100	nAdc
Emitter Cutoff Current ($V_{EB} = -10 \text{ Vdc}$, $I_C = 0$)	I_{EBO}	—	-100	nAdc

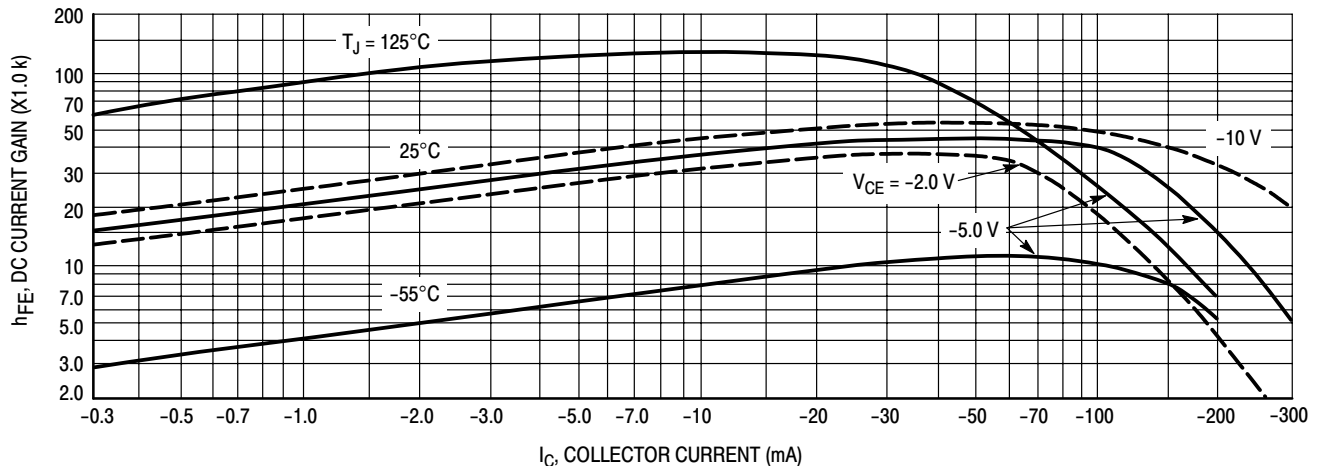
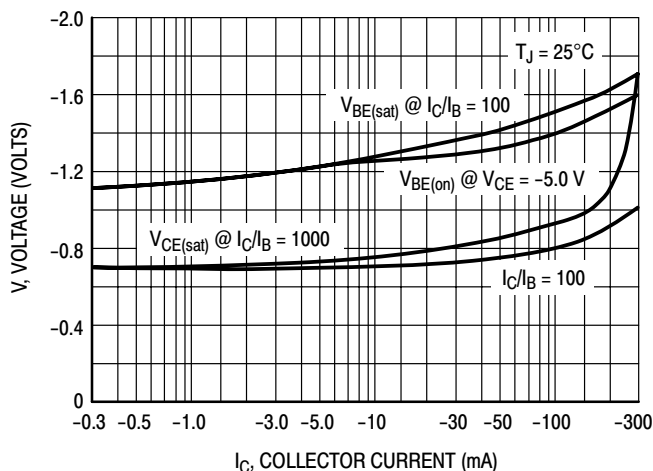
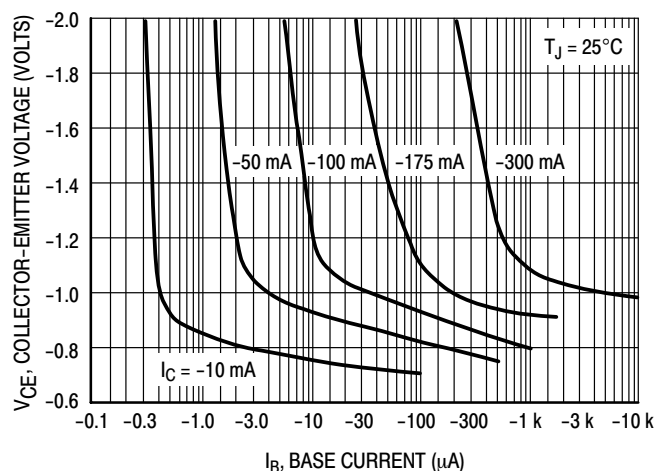
Preferred devices are ON Semiconductor recommended choices for future use and best overall value.

MPSW63 MPSW64**ELECTRICAL CHARACTERISTICS** ($T_A = 25^\circ\text{C}$ unless otherwise noted) (Continued)

Characteristic	Symbol	Min	Max	Unit
ON CHARACTERISTICS⁽¹⁾				
DC Current Gain ($I_C = -10\text{ mA}$, $V_{CE} = -5.0\text{ Vdc}$)	h_{FE}	5,000	—	—
	MPSW63 MPSW64	10,000	—	—
($I_C = -100\text{ mA}$, $V_{CE} = -5.0\text{ Vdc}$)	MPSW63	10,000	—	—
	MPSW64	20,000	—	—
Collector–Emitter Saturation Voltage ($I_C = -100\text{ mA}$, $I_B = -0.1\text{ mA}$)	$V_{CE(sat)}$	—	-1.5	Vdc
Base–Emitter On Voltage ($I_C = -100\text{ mA}$, $V_{CE} = -5.0\text{ Vdc}$)	$V_{BE(on)}$	—	-2.0	Vdc

SMALL-SIGNAL CHARACTERISTICS

Current–Gain — Bandwidth Product ⁽²⁾ ($I_C = -10\text{ mA}$, $V_{CE} = -5.0\text{ Vdc}$, $f = 100\text{ MHz}$)	f_T	125	—	MHz
--	-------	-----	---	-----

1. Pulse Test: Pulse Width $\leq 300\ \mu\text{s}$, Duty Cycle $\leq 2.0\%$.2. $f_T = |h_{fe}| \cdot f_{test}$.**TYPICAL ELECTRICAL CHARACTERISTICS****Figure 1. DC Current Gain****Figure 2. "ON" Voltage****Figure 3. Collector Saturation Region**

MPSW63 MPSW64

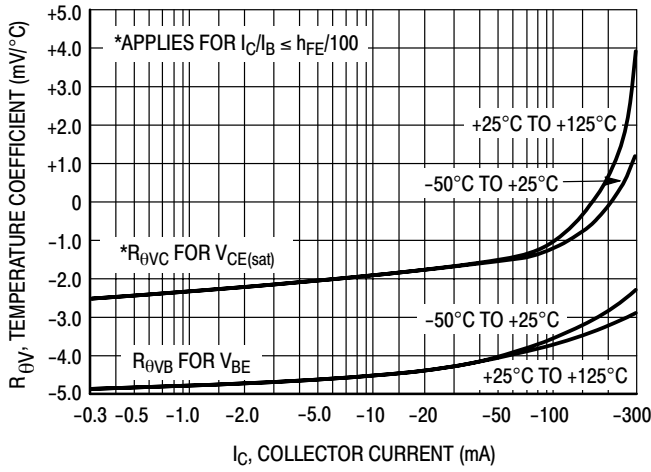


Figure 4. Temperature Coefficients

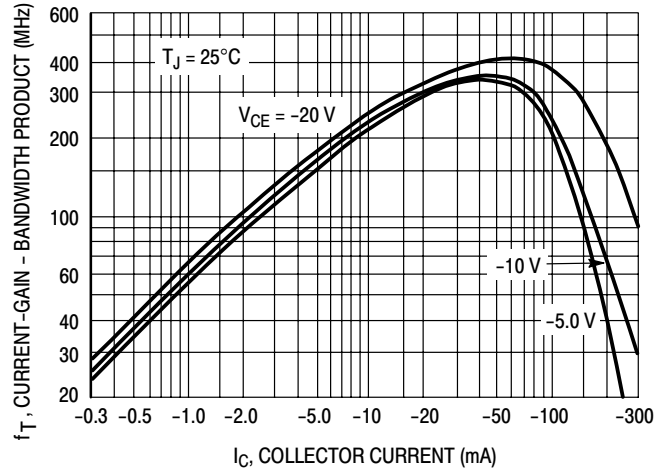


Figure 5. Current-Gain — Bandwidth Product

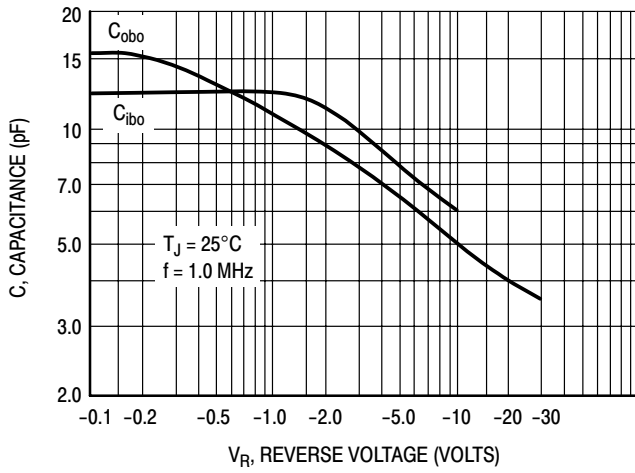


Figure 6. Capacitance

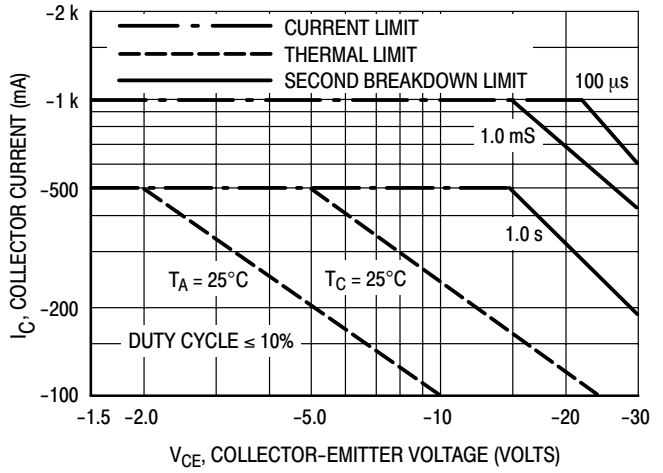
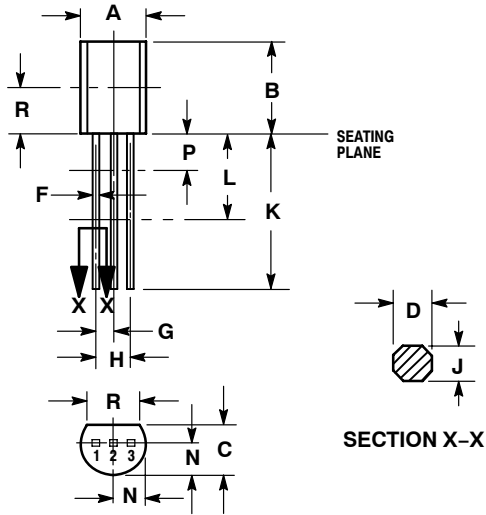


Figure 7. Active Region, Safe Operating Area

MPSW63 MPSW64

PACKAGE DIMENSIONS

TO-92 (TO-226) CASE 29-10 ISSUE AL



- NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
 2. CONTROLLING DIMENSION: INCH.
 3. CONTOUR OF PACKAGE BEYOND DIMENSION R IS UNCONTROLLED.
 4. DIMENSION F APPLIES BETWEEN P AND L. DIMENSIONS D AND J APPLY BETWEEN L AND K MINIMUM. LEAD DIMENSION IS UNCONTROLLED IN P AND BEYOND DIMENSION K MINIMUM.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.175	0.205	4.44	5.21
B	0.290	0.310	7.37	7.87
C	0.125	0.165	3.18	4.19
D	0.018	0.021	0.457	0.533
F	0.016	0.019	0.407	0.482
G	0.045	0.055	1.15	1.39
H	0.095	0.105	2.42	2.66
J	0.018	0.024	0.46	0.61
K	0.500	---	12.70	---
L	0.250	---	6.35	---
N	0.080	0.105	2.04	2.66
P	---	0.100	---	2.54
R	0.135	---	3.43	---

- TYPE 1:
 PIN 1. EMITTER
 2. BASE
 3. COLLECTOR

ON Semiconductor and are registered trademarks of Semiconductor Components Industries, LLC (SCILLC). SCILLC reserves the right to make changes without further notice to any products herein. SCILLC makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does SCILLC assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. "Typical" parameters which may be provided in SCILLC data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. SCILLC does not convey any license under its patent rights nor the rights of others. SCILLC products are not designed, intended, or authorized for use as components in systems intended for surgical implant into the body, or other applications intended to support or sustain life, or for any other application in which the failure of the SCILLC product could create a situation where personal injury or death may occur. Should Buyer purchase or use SCILLC products for any such unintended or unauthorized application, Buyer shall indemnify and hold SCILLC and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that SCILLC was negligent regarding the design or manufacture of the part. SCILLC is an Equal Opportunity/Affirmative Action Employer. This literature is subject to all applicable copyright laws and is not for resale in any manner.

PUBLICATION ORDERING INFORMATION

LITERATURE FULFILLMENT:
 Literature Distribution Center for ON Semiconductor
 P.O. Box 61312, Phoenix, Arizona 85082-1312 USA
Phone: 480-829-7710 or 800-344-3860 Toll Free USA/Canada
Fax: 480-829-7709 or 800-344-3867 Toll Free USA/Canada
Email: orderlit@onsemi.com

N. American Technical Support: 800-282-9855 Toll Free
 USA/Canada

Japan: ON Semiconductor, Japan Customer Focus Center
 2-9-1 Kamimeguro, Meguro-ku, Tokyo, Japan 153-0051
Phone: 81-3-5773-3850

ON Semiconductor Website: <http://onsemi.com>

Order Literature: <http://www.onsemi.com/litorder>

For additional information, please contact your local Sales Representative.

OUR CERTIFICATE

DiGi provide top-quality products and perfect service for customer worldwide through standardization, technological innovation and continuous improvement. DiGi through third-party certification, we strictly control the quality of products and services. Welcome your RFQ to

Email: Info@DiGi-Electronics.com



Tel: +00 852-30501935

RFQ Email: Info@DiGi-Electronics.com

DiGi is a global authorized distributor of electronic components.