

The documentation and process conversion measures necessary to comply with this revision shall be completed by 30 October 2015.

INCH-POUND

MIL-PRF-19500/735B
30 July 2015
SUPERSEDING
MIL-PRF-19500/735A
24 July 2009

PERFORMANCE SPECIFICATION SHEET

DIODE, SILICON, SCHOTTKY, DUAL, CENTER TAP,
TYPE 1N7041CCU1 AND SINGLE DIODE TYPE 1N7045T3, JAN, JANTX, JANTXV, AND JANS

This specification is approved for use by all Departments and Agencies of the Department of Defense.

The requirements for acquiring the product described herein shall consist of this specification sheet and [MIL-PRF-19500](#).

1. SCOPE

- * 1.1 Scope. This specification covers the performance requirements for silicon, schottky, power rectifier diodes for use in high frequency switching applications. Four levels of product assurance are provided for each device type (JAN, JANTX, JANTXV, and JANS).
- * 1.2 Package outlines. The device package outlines are as follows: U1 in accordance with [figure 1](#). TO-257AA (T3 suffix) in accordance with [figure 2](#).
- 1.3 Maximum ratings. Unless otherwise specified, maximum ratings ($T_A = +25^\circ\text{C}$).

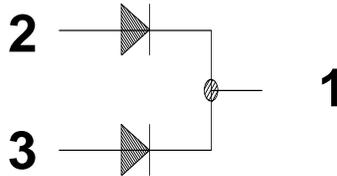
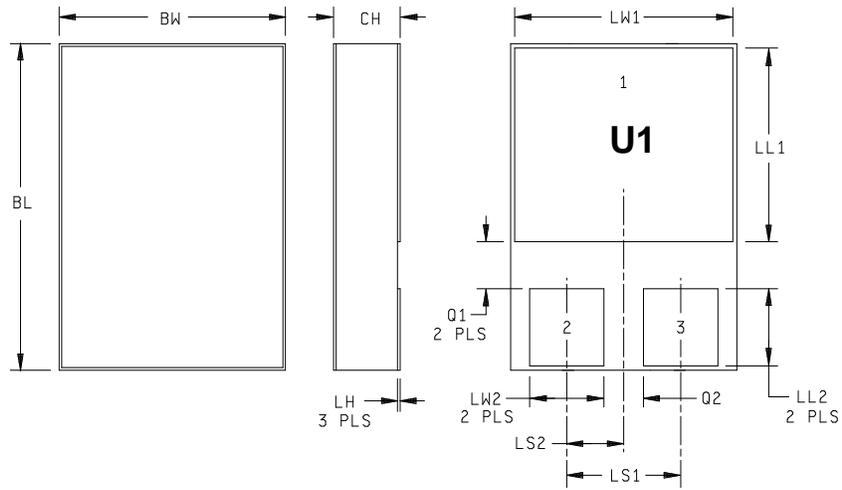
Column 1	Column 2	Column 3	Column 4	Column 5	Column 6
Types	V_{RWM}	I_O (1)(2) $T_C = +100^\circ\text{C}$	I_{FSM} (3) $t_p = 8.3 \text{ ms}$, $T_C = +25^\circ\text{C}$	$R_{\theta JC}$	T_{STG} And T_J
	V dc	A dc	A (pk)	$^\circ\text{C/W}$	$^\circ\text{C}$
1N7041CCU1	45	20	250	1.67 (3)	-65 to +150
1N7045T3	45	10	110	2.6	

- (1) See temperature-current derating curves in [figures 3 and 4](#).
- (2) Entire package.
- (3) Each leg.

1.4 Primary electrical characteristics. $R_{\theta JC} = 0.83^\circ\text{C/W}$ maximum for entire package for 1N7041CCU1; $R_{\theta JC} = 2.6^\circ\text{C/W}$ maximum for 1N7045T3; $R_{\theta JA} = 80^\circ\text{C/W}$ maximum.

* Comments, suggestions, or questions on this document should be addressed to DLA Land and Maritime, ATTN: VAC, P.O. Box 3990, Columbus, OH 43218-3990, or emailed to Semiconductor@dla.mil. Since contact information can change, you may want to verify the currency of this address information using the ASSIST Online database at <https://assist.dla.mil>.

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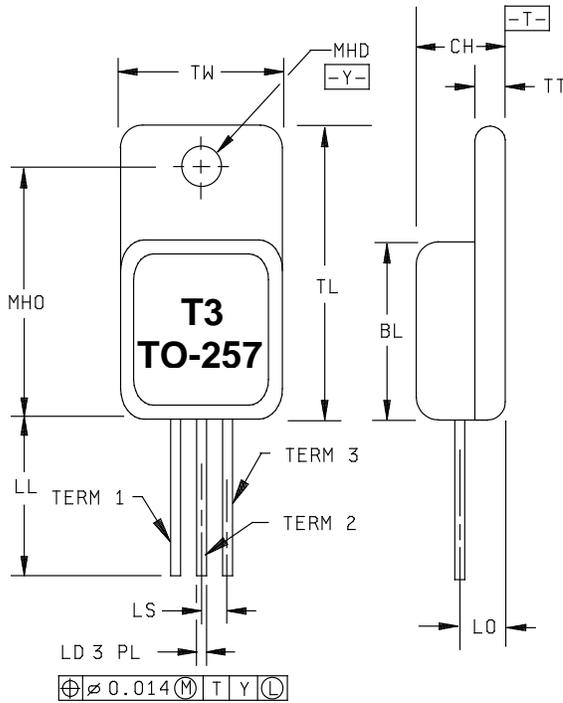


Symbol	Dimensions			
	Inches		Millimeters	
	Min	Max	Min	Max
BL	.620	.630	15.75	16.00
BW	.445	.455	11.30	11.56
CH	.129	.141	3.28	3.58
LH	.010	.020	0.25	0.51
LL1	.410	.420	10.41	10.67
LL2	.152	.162	3.86	4.11
LS1	.200	.220	5.08	5.59
LS2	.100	.110	2.54	2.79
LW1	.370	.380	9.40	9.65
LW2	.135	.145	3.43	3.68
Q1	.030		0.76	
Q2	.035		0.89	
Term 1	Cathode			
Term 2	Anode			
Term 3	Anode			

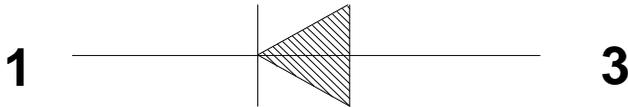
NOTES:

1. Dimensions are in inches.
2. Millimeters are given for general information only.
3. In accordance with ASME Y14.5M, diameters are equivalent to ϕ x symbology.

FIGURE 1. Physical dimensions and configuration for 1N7041CCU1.



Ltr	Dimensions			
	Inches		Millimeters	
	Min	Max	Min	Max
BL	.410	.430	10.41	10.92
CH	.190	.200	4.83	5.08
LD	.025	.035	0.64	0.88
LL	.500	.750	12.70	19.05
LO	.120 BSC		3.05 BSC	
LS	.100 BSC		2.54 BSC	
MHD	.140	.150	3.56	3.81
MHO	.527	.537	13.39	13.64
TL	.645	.665	16.38	16.89
TT	.035	.045	0.89	1.14
TW	.410	.420	10.41	10.67



NOTES:

1. Dimensions are in inches.
2. Millimeters are given for general information only.
3. In accordance with ASME Y14.5M, diameters are equivalent to Φx symbology.

FIGURE 2. Dimensions and configuration for 1N7045T3.

- * 1.5 Part or Identifying Number (PIN). The PIN is in accordance with [MIL-PRF-19500](#), and as specified herein. See [6.5.1](#) for PIN construction example and [6.5.2](#) for a list of available PINs.
- * 1.5.1 JAN certification mark and quality level for encapsulated devices. The quality level designators for encapsulated devices that are applicable for this specification sheet from the lowest to the highest level are as follows: "JAN", "JANTX", "JANTXV" and "JANS".
- * 1.5.2 Device type. The designation system for the device types of diodes covered by this specification sheet are as follows.
 - * 1.5.2.1 First number and first letter symbols. The diodes of this specification sheet use the first number and letter symbols "1N".
 - * 1.5.2.2 Second number symbols. The second number symbols for the diodes covered by this specification sheet are as follows: "7041CC" and "7045".
 - * 1.5.2.3 Suffix letters. The suffix letters "U1" are used on devices that are packaged in the package of [figure 1](#) (7041CC only). The suffix letter "T3" is used on devices that are packaged in the TO-257AA package of [figure 2](#) (7045 only).
- * 1.5.3 Lead finish. The lead finishes applicable to this specification sheet are listed on [QPDSIS-19500](#).

2. APPLICABLE DOCUMENTS

- * 2.1 General. The documents listed in this section are specified in sections 3 and 4 of this specification. This section does not include documents cited in other sections of this specification or recommended for additional information or as examples. While every effort has been made to ensure the completeness of this list, document users are cautioned that they must meet all specified requirements of documents cited in sections 3 and 4 of this specification, whether or not they are listed.

2.2 Government documents.

2.2.1 Specifications, standards, and handbooks. The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those cited in the solicitation or contract.

DEPARTMENT OF DEFENSE SPECIFICATIONS

[MIL-PRF-19500](#) - Semiconductor Devices, General Specification for.

DEPARTMENT OF DEFENSE STANDARDS

[MIL-STD-750](#) - Test Methods for Semiconductor Devices.

- * (Copies of these documents are available online at <http://quicksearch.dla.mil/>).

2.3 Order of precedence. Unless otherwise noted herein or in the contract, in the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 General. The individual item requirements shall be as specified in [MIL-PRF-19500](#) and as modified herein.

3.2 Qualification. Devices furnished under this specification shall be products that are manufactured by a manufacturer authorized by the qualifying activity for listing on the applicable qualified manufacturer's list (QML) before contract award (see [4.2](#) and [6.3](#)).

3.3 Abbreviations, symbols, and definitions. Abbreviations, symbols, and definitions used herein shall be as specified in [MIL-PRF-19500](#).

3.4 Interface and physical dimensions. The interface and physical dimensions shall be as specified in [MIL-PRF-19500](#), and on figures 1 and 2 herein. Methods used for electrical isolation of the terminal feedthroughs for the TO-257 package shall employ materials that contain a minimum of 90 percent Al₂O₃ (ceramic).

3.4.1 Polarity. Polarity and terminal configuration shall be in accordance with figures 1 and 2 herein.

3.4.2 Lead finish and formation. Lead finish shall be solderable in accordance with [MIL-PRF-19500](#), MIL-STD-750, and herein. Where a choice of finish is desired, it shall be specified in the acquisition document (see [6.2](#)). When lead formation is performed on the TO-257, as a minimum, the vendor shall perform 100 percent hermetic seal in accordance with screen 14 of [MIL-PRF-19500](#) and 100 percent dc testing in accordance with [table I](#), subgroup 2 herein.

3.5 Electrical performance characteristics. Unless otherwise specified herein, the electrical performance characteristics are as specified in [1.3](#), [1.4](#), and [table I](#) herein.

3.6 Electrical test requirements. The electrical test requirements shall be as specified in tables I and II herein.

3.7 Marking. Marking shall be in accordance with [MIL-PRF-19500](#) and herein.

3.8 Workmanship. Semiconductor devices shall be processed in such a manner as to be uniform in quality and shall be free from other defects that will affect life, serviceability, or appearance.

4. VERIFICATION

4.1 Classification of inspections. The inspection requirements specified herein are classified as follows:

- a. Qualification inspection (see [4.2](#)).
- b. Screening (see [4.3](#)).
- c. Conformance inspection (see [4.4](#) and tables I and II herein).

4.2 Qualification inspection. Qualification inspection shall be in accordance with [MIL-PRF-19500](#) and as specified herein.

4.2.1 Group E qualification. Group E inspection shall be performed for qualification or re-qualification only. In case qualification was awarded to a prior revision of the specification sheet that did not request the performance of [table III](#) tests, the tests specified in [table III](#) herein that were not performed in the prior revision shall be performed on the first inspection lot of this revision to maintain qualification.

4.3 Screening (JANS, JANTXV, and JANTX levels). Screening shall be in accordance with table E-IV of MIL-PRF-19500 and as specified herein. The following measurements shall be made in accordance with table I herein. Devices that exceed the limits of table I herein shall not be acceptable.

Screen (see table E-IV of MIL-PRF-19500)	Measurement	
	JANS level	JANTX and JANTXV levels
3b	Method 4066 of MIL-STD-750, condition A, one pulse, $t_p = 8.3\text{ms}$, $I_O = 0$, $V_{RWM} = 0$, $I_{FSM} = \text{see 1.3 herein}$.	Method 4066 of MIL-STD-750, condition A, one pulse, $t_p = 8.3\text{ms}$, $I_O = 0$, $V_{RWM} = 0$, $I_{FSM} = \text{see 1.3 herein}$.
3c	Thermal impedance (see 4.3.2)	Thermal impedance (see 4.3.2)
3d	Avalanche energy test (see 4.3.3)	Avalanche energy test (see 4.3.3)
4	Required	Optional
5	Required	Not applicable
8	Required	Not applicable
9, 10	Not applicable	Not applicable
11	V_{F1} and I_{R1}	V_{F1} and I_{R1}
12	See 4.3.1, 240 hours	See 4.3.1, 48 hours
13	Subgroup 2 and 3, of table I herein, V_{F1} and I_{R1} ; $\Delta V_{F1} \leq 50\text{ mV (pk)}$; $\Delta I_{R1} = \pm 100$ percent from the initial value or $\pm 100\text{ uA dc}$, whichever is greater.	Subgroup 2, of table I herein; V_{F1} and I_{R1} ; $\Delta V_{F1} \leq 50\text{ mV (pk)}$; $\Delta I_{R1} = \pm 100$ percent from the initial value or $\pm 100\text{ uA dc}$, whichever is greater.

4.3.1 Power burn-in conditions. Burn-in conditions are as follows: Method 1038 of MIL-STD-750, test condition A. $V_R = 36\text{ V dc}$; $T_J = +125^\circ\text{C}$.

4.3.2 Thermal impedance measurements. The thermal impedance measurements shall be performed in accordance with method 3101 of MIL-STD-750 using the guidelines in that method for determining I_M , I_H , t_H , t_{MD} and V_C . Measurement delay time (t_{MD}) = 70 μs max. See table III, group E, subgroup 4 herein.

4.3.3 Avalanche energy test. The peak reverse energy test is to be performed in accordance with method 4064 of MIL-STD-750 using the circuit as shown on figure 7 or equivalent. The Schottky rectifier under test must be capable of absorbing the reverse energy, as follows: $I_{AS} = 1\text{ A}$, $V_{BR} = 45\text{ V}$ minimum, $L = 100\text{ uH}$.

4.4 Conformance inspection. Conformance inspection shall be in accordance with MIL-PRF-19500.

4.4.1 Group A inspection. Group A inspection shall be conducted in accordance with table E-V of MIL-PRF-19500, and table I herein. Electrical measurements (end-points) and delta requirements shall be in accordance with the applicable steps of table II herein.

* 4.4.2 Group B inspection. Group B inspection shall be conducted in accordance with the conditions specified for subgroup testing in tables E-VIA (JANS) and E-VIB (JAN, JANTX, and JANTXV) of MIL-PRF-19500 and as follows. Delta measurements shall be in accordance with table II herein.

4.4.2.1 Group B inspection, table E-VIA (JANS) of MIL-PRF-19500.

	<u>Subgroup</u>	<u>Method</u>	<u>Condition</u>
*	B4	1037	$\Delta T_C = +85^\circ\text{C}$, $I_F = 2$ A minimum.
	B5	1038	Condition A, $V_R = 36$ V dc, $T_J = +125^\circ\text{C}$, $t = 340$ hours min; heat sinking allowed. This test shall be extended to 1000 hours on each JANS wafer lot.

4.4.2.2 Group B inspection, table E-VIB (JAN, JANTX, and JANTXV) of MIL-PRF-19500.

	<u>Subgroup</u>	<u>Method</u>	<u>Condition</u>
*	B3	1037	$\Delta T_C = +85^\circ\text{C}$, $I_F = 2$ A minimum.

- * 4.4.3 Group C inspection. Group C inspection shall be conducted in accordance with the conditions specified for subgroup testing in table E-VII of MIL-PRF-19500. Delta measurements shall be in accordance with [table II](#) herein.

	<u>Subgroup</u>	<u>Method</u>	<u>Condition</u>
	C2	2036	Condition A, weight = 10 lbs, $t = 15$ seconds. Not required for 1N7041CCU1.
	C5	4081	Limit for thermal resistance for 1N7041 is 1.67°C/W for each leg. Limit for thermal resistance for 1N7045 is 2.6°C/W .
*	C6	1037	$\Delta T_C = +85^\circ\text{C}$, $I_F = 2$ A minimum.
	C6	1038	Condition A, $V_R = 36$ V dc, $T_J = +125^\circ\text{C}$, $t = 1,000$ hours minimum; (heat sinking allowed). (required for TX and TXV levels only)

4.4.4 Group E inspection. Group E inspection shall be conducted in accordance with the tests and conditions specified for subgroup testing in table E-IX of MIL-PRF-19500, and [table III](#) herein. Electrical measurements (end-points) shall be in accordance with [table I](#), subgroup 2 herein except $Z_{\Theta JX}$ need not be performed after group E subgroup 2.

4.5 Methods of inspection. Methods of inspection shall be as specified in the appropriate tables as follows.

4.5.1 Pulse measurements. Conditions for pulse measurement shall be as specified in section 4 of MIL-STD-750.

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TABLE I. Group A inspection.

Inspection <u>1/ 2/</u>	MIL-STD-750		Symbol	Limits		Unit
	Method	Conditions		Min	Max	
<u>Subgroup 1</u>						
Visual and mechanical examination	2071					
<u>Subgroup 2</u>						
Forward voltage 1N7041 1N7045	4011	Pulsed (see 4.5.1), Condition B $I_F = 10A (pk)$ $I_F = 10A (pk)$	V_{F1}	0.57 0.73	V dc V dc	
Forward voltage 1N7041 1N7045	4011	Pulsed (see 4.5.1), Condition B $I_F = 20 A(pk)$ $I_F = 20 A(pk)$	V_{F2}	0.69 1.02	V dc V dc	
Reverse current 1N7041 1N7045	4016	DC method $V_R = 45 V$ $V_R = 45 V$	I_{R1}	0.5 0.5	mA dc mA dc	
<u>Subgroup 3</u>						
High temperature operation:		$T_C = +125^\circ C$				
Forward voltage 1N7041 1N7045	4011	Pulsed (see 4.5.1), Condition B $I_F = 10 A(pk)$ $I_F = 10 A(pk)$	V_{F3}	0.48 0.70	V dc V dc	
Forward voltage 1N7041 1N7045	4011	Pulsed (see 4.5.1), Condition B $I_F = 20 A(pk)$ $I_F = 20 A(pk)$	V_{F4}	0.61 1.10	V dc V dc	
Reverse current 1N7041 1N7045	4016	DC method; $V_R = 45 V$ $V_R = 45 V$	I_{R2}	67 67	mA dc mA dc	
Low temperature operation:		$T_C = -55^\circ C$				
Forward voltage 1N7041 1N7045	4011	Pulsed (see 4.5.1), Condition B $I_F = 10 A dc$ $I_F = 10 A dc$	V_{F5}	0.65 0.74	V dc V dc	
Forward voltage 1N7041 1N7045	4011	Pulsed (see 4.5.1), Condition B $I_F = 20 A dc$ $I_F = 20 A dc$	V_{F6}	0.74 0.95	V dc V dc	

See footnotes at end of table.

*

TABLE I. Group A inspection - Continued.

Inspection 1/ 2/	MIL-STD-750		Symbol	Limits		Unit
	Method	Conditions		Min	Max	
<u>Subgroup 4</u> Junction capacitance	4001	$V_R = 5 \text{ V dc}$, $f = 1 \text{ MHz}$, $V_{SIG} = 50 \text{ mV (p-p)}$	C_J		900	pF
<u>Subgroup 5</u> Not applicable						
<u>Subgroup 6</u> Surge	4066	See column 4 of 1.3 . Ten surges for each internal diode. 60 seconds between surges. (see 4.5.1) See table I , subgroup 2 herein.				
Electrical measurements						
<u>Subgroup 7</u> Dielectric withstanding voltage	1016	$V_R = 500 \text{ V dc}$; all leads shorted, measure from leads to case	DWV		10	$\mu\text{A dc}$
Scope display evaluation	4023	Stable only				
Electrical measurements		See table I , subgroup 2 herein.				

1/ For sampling plan, see [MIL-PRF-19500](#).

2/ Electrical characteristics apply to all package styles and polarities.

* TABLE II. Groups B, C, and E delta requirements. 1/ 2/ 3/ 4/ 5/ 6/

Step	Inspection	MIL-STD-750		Symbol	Limits		Unit
		Method	Conditions		Min	Max	
1.	Forward voltage 1N7041 1N7045	4011	Condition B I _F = 10 A (pk) pulsed (see 4.5.1) I _F = 10 A (pk) pulsed (see 4.5.1)	ΔV _{F1}	±50 mV dc from initial reading.		
2.	Reverse current	4016	V _R = 45V	ΔI _{R1}	±100 percent from the initial value or ±100μA dc, whichever is greater.		
3.	Thermal impedance	4081	See 4.3.2	Z _{ΘJX}			

1/ Each internal diode.

2/ The delta measurements for table E-VIA (JANS) of MIL-PRF-19500 are as follows:

- a. Subgroup 4, see table II herein, steps 1, 2, and 3.
- b. Subgroup 5, see table II herein, steps 1 and 2.

3/ The delta measurements for table E-VIB (JANTX and JANTXV) of MIL-PRF-19500 are as follows:

- a. Subgroup 2, see table II herein, steps 1, 2, and 3.
- b. Subgroup 3, see table II herein, steps 1, 2, and 3.
- c. Subgroup 6, see table II herein, steps 1 and 2.

4/ The delta measurements for table E-VII of MIL-PRF-19500 are as follows:

- a. Subgroups 2 and 3, see table II herein, steps 1, 2, and 3 for all levels.
- b. Subgroup 6, see table II herein, steps 1, 2, and 3 for all levels.

5/ Devices which exceed the table I limits for this test shall not be accepted.

6/ The delta measurements for table E-IX of MIL-PRF-19500 are as follows:

- a. Subgroup 1, see table II herein, steps 1, 2, and 3.
- b. Subgroup 2, see table II herein, steps 1 and 2.

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* TABLE III. Group E inspection (all quality levels) – for qualification and requalification only.

Inspection	MIL-STD-750		Qualification
	Method	Conditions	
<u>Subgroup 1</u> Temperature cycling (air to air) Hermetic seal Electrical measurements	1051 1071	Test condition G, 500 cycles, -55°C to +150°C. See table I , subgroup 2.	45 devices c = 0
<u>Subgroup 2</u> Life test Electrical measurements	1048	t = 1,000 hours, T _J = +125°C, V _R = 80 percent rated voltage (see 1.3 , column 2 herein). See table I subgroup 2.	45 devices c = 0
<u>Subgroup 4</u> Thermal impedance curves		See MIL-PRF-19500 .	
<u>Subgroup 10 1/</u> Surge 1N7041 1N7045 Electrical measurements	4066	Condition A, T _A = +25°C I _{FSM} = 250 A, 100 surges of 8.3 ms superimposed on I _O . V _R = 0; I _O = 0 A pk half sine wave. Condition A, T _A = +25°C I _{FSM} = 110 A, 100 surges of 8.3 ms superimposed on I _O . V _R = 0; I _O = 0 A pk half sine wave. See table I subgroup 2 (V _F and I _R only).	5 devices c = 0

1/ Each individual diode.

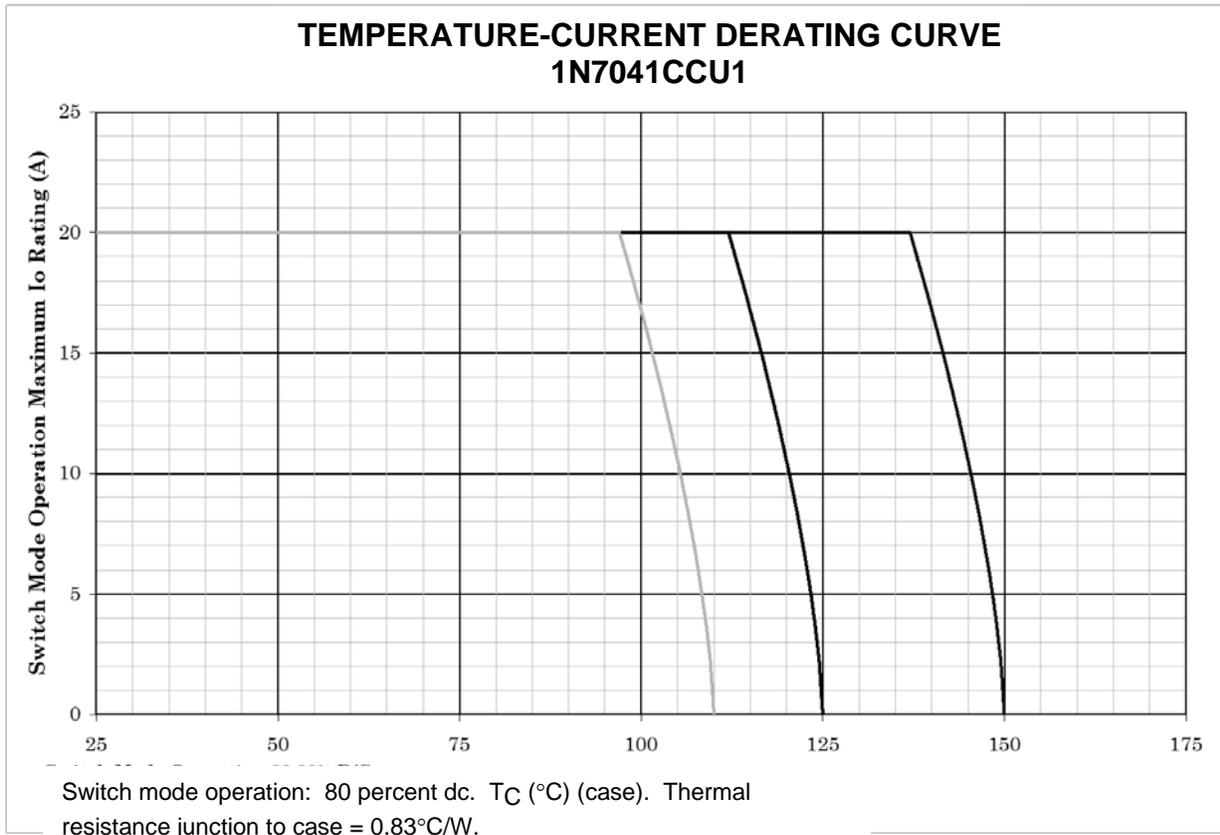


FIGURE 3. Temperature-current derating curve (entire package) 1N7041CCU1.

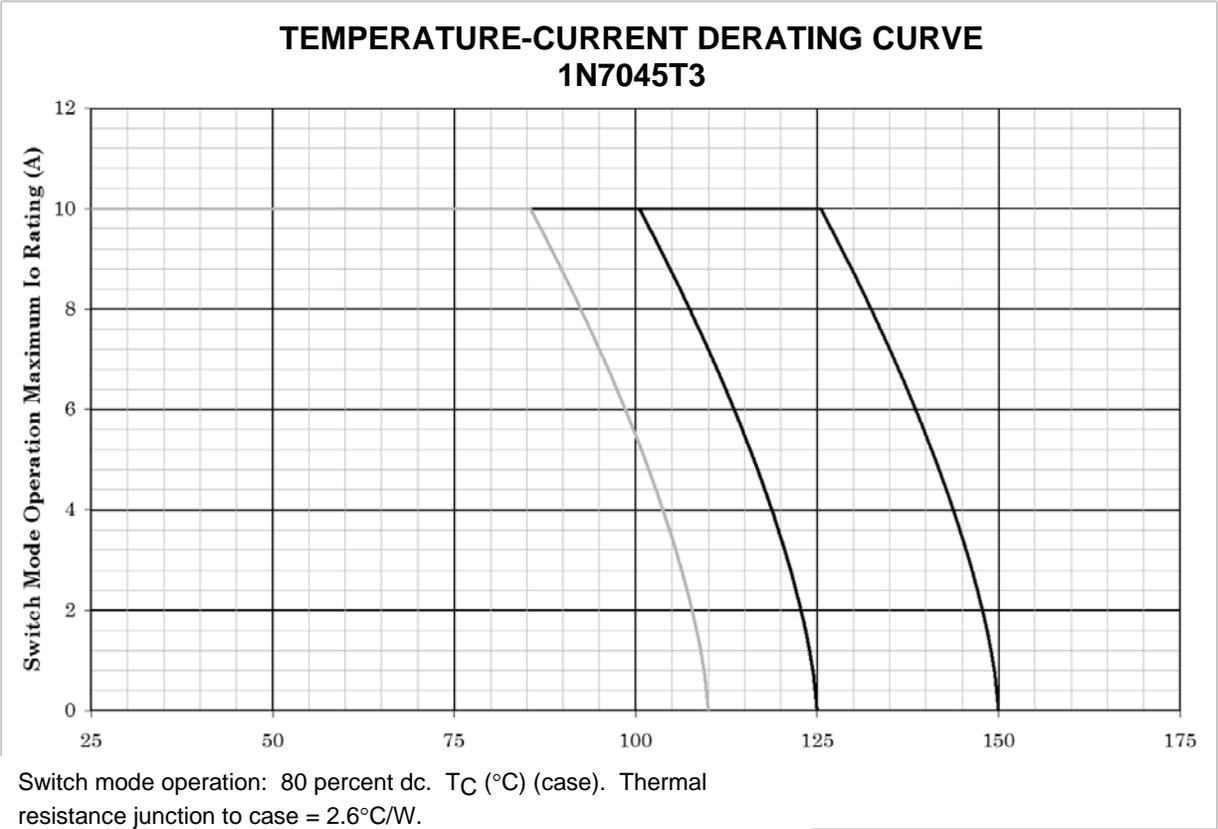


FIGURE 4. Temperature-current derating curve for 1N7045T3.

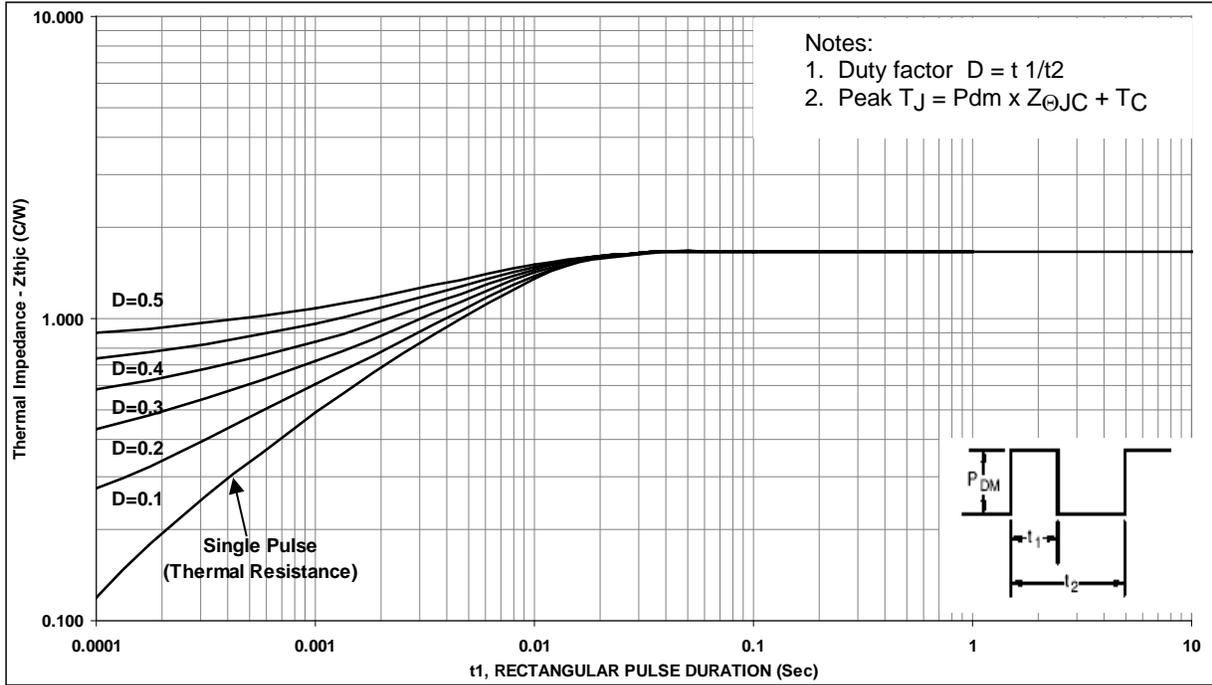


FIGURE 5. Thermal impedance (for each leg) 1N7041CCU1.

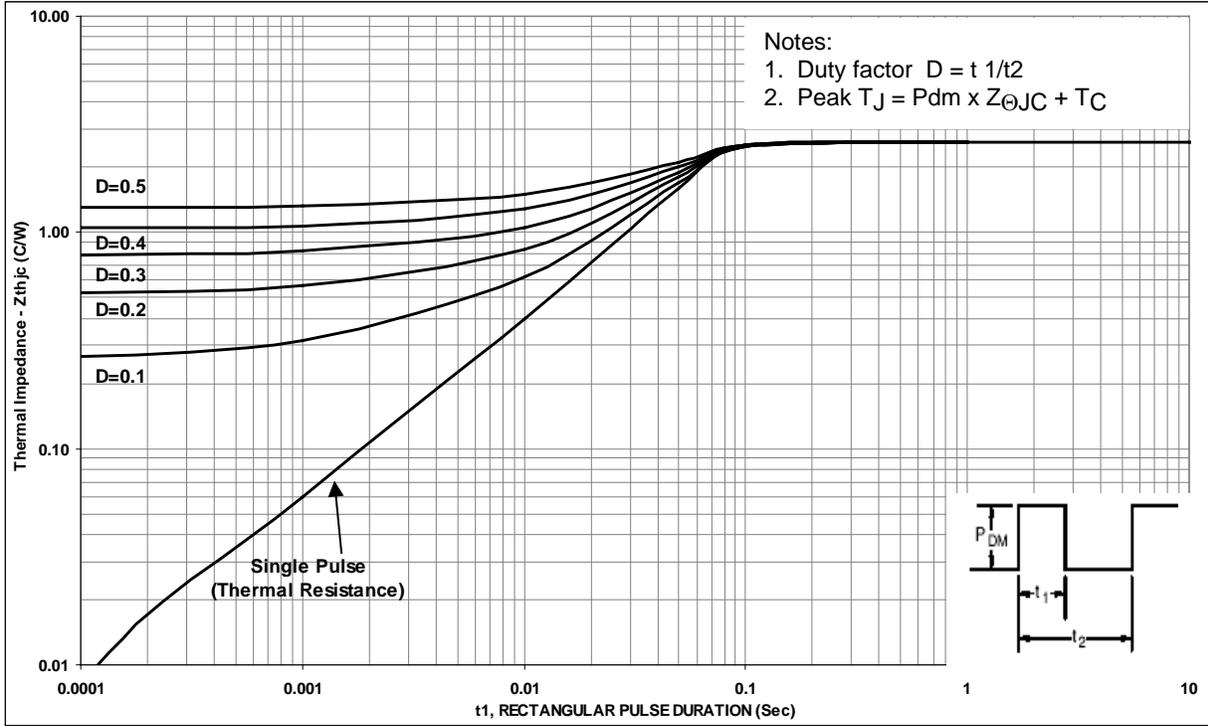
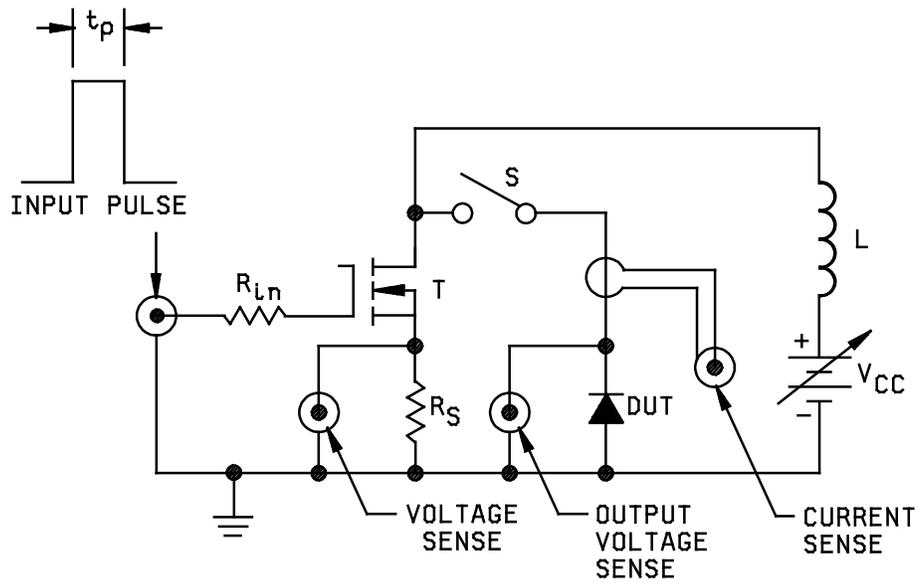


FIGURE 6. Thermal impedance for 1N7045T3.



Input pulse $R_{in} = 50$ ohms
 $V_G = 10$ volts, $R_S = 0.1$ ohms
 $Z_G = 50$ ohms
 $L = 100\mu\text{H}$
 Duty cycle ≤ 1 percent, $T = \text{IRF150/2N6764}$ or equivalent

Procedures:

1. With S open, adjust pulse width to test current of 1 amps across R_S .
2. Close S, verify test current with current sense.
3. Read peak output voltage (see 4.3.3).

FIGURE 7. Avalanche energy test circuit.

5. PACKAGING

5.1 Packaging. For acquisition purposes, the packaging requirements shall be as specified in the contract or order (see 6.2). When packaging of materiel is to be performed by DoD or in-house contractor personnel, these personnel need to contact the responsible packaging activity to ascertain packaging requirements. Packaging requirements are maintained by the Inventory Control Point's packaging activities within the Military Service or Defense Agency, or within the Military Service's system commands. Packaging data retrieval is available from the managing Military Department's or Defense Agency's automated packaging files, CD-ROM products, or by contacting the responsible packaging activity.

6. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

6.1 Intended use. Semiconductors conforming to this specification are intended for original equipment design applications and logistic support of existing equipment.

6.2 Acquisition requirements. Acquisition documents should specify the following:

- a. Title, number, and date of this specification.
- b. Packaging requirements (see 5.1).
- c. Lead finish (see 3.4.1).
- * d. The complete Part or Identifying Number (PIN), see 1.5 and 6.5.

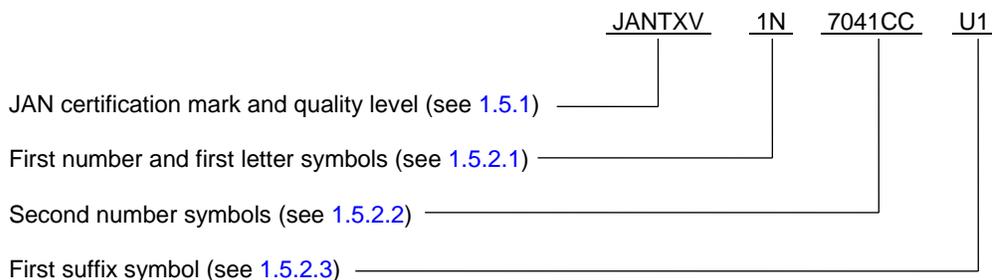
* 6.3 Qualification. With respect to products requiring qualification, awards will be made only for products which are, at the time of award of contract, qualified for inclusion in Qualified Manufacturers List ([QML 19500](http://www.dla.mil/qml)) whether or not such products have actually been so listed by that date. The attention of the contractors is called to these requirements, and manufacturers are urged to arrange to have the products that they propose to offer to the Federal Government tested for qualification in order that they may be eligible to be awarded contracts or orders for the products covered by this specification. Information pertaining to qualification of products may be obtained from DLA Land and Maritime, ATTN: VQE, P.O. Box 3990, Columbus, OH 43218-3990 or e-mail vqe.chief@dla.mil. An online listing of products qualified to this specification may be found in the Qualified Products Database (QPD) at <https://assist.dla.mil>.

6.4 Cross reference substitution list. A PIN for PIN replacement table follows, and these devices are directly interchangeable.

Non-preferred PIN	Preferred PIN
20CLQ045 10YQ045C	JANS, JANTXV, JANTX, JAN1N7041CCU1 JANS, JANTXV, JANTX, JAN1N7045T3

* 6.5 PIN construction example.

* 6.5.1 Encapsulated devices The PINs for encapsulated devices are constructed using the following form.



* 6.5.2 List of PINs for encapsulated devices. The following is a list of possible PINs for encapsulated devices available on this specification sheet.

PINs for devices of the base quality level	PINs for devices of the "TX" quality level	PINs for devices of the "TXV" quality level	PINs for devices of the "S" quality level
JAN1N7041CCU1	JANTX1N7041CCU1	JANTXV1N7041CCU1	JANS1N7041CCU1
JAN1N7045T3	JANTX1N7045T3	JANTXV1N7045T3	JANS1N7045T3

* 6.6 Changes from previous issue. The margins of this specification are marked with asterisks to indicate where changes from the previous issue were made. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations and relationship to the last previous issue.

Custodians:
 Army - CR
 Navy - EC
 Air Force - 85
 NASA - NA
 DLA - CC

Preparing activity:
 DLA - CC
 (Project 5961-2015-072)

* NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at <https://assist.dla.mil>.