

ANTREX Electronics

Electronic Components Sourcing Information

Product Reference Information

Part Number:	DMJ70H600HK3-13
Manufacturer:	Diodes Incorporated
Package:	Please confirm with sales
Availability:	Please confirm with sales

Product Page:

<https://antrexco.com/product/details/diodes-incorporated/dmj70h600hk3-13.html>

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Contact Information

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Website: <https://antrexco.com>

Quality & Trust

New & Original Components

Supplier verification and packaging condition review

CoC / RoHS / REACH documents available on request

Secure sourcing support for OEM / EMS projects

Note:

This PDF includes an ANTREX product reference cover page.

The original manufacturer datasheet follows from the next page.

Product Summary

BV _{DSS}	R _{DS(ON)} Max	I _D T _c = +25°C
700V	0.6Ω @ V _{GS} = 10V	7.6A

Description and Applications

This MOSFET is designed to minimize the on-state resistance (R_{DS(ON)}) yet maintain superior switching performance, making it ideal for high-efficiency power management applications.

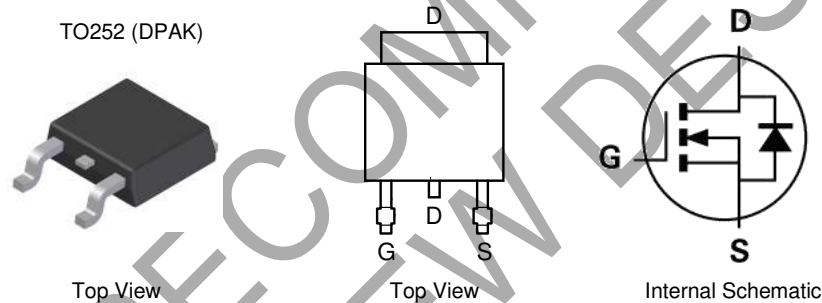
- Motor controls
- Backlighting
- AC-DC converters

Features and Benefits

- Low Gate Input Resistance
- Low Input Capacitance
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **For automotive applications requiring specific change control (i.e. parts qualified to AEC-Q100/101/104/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please [contact us](#) or your local Diodes representative. <https://www.diodes.com/quality/product-definitions/>**

Mechanical Data

- Package: TO252
- Package Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 3 per J-STD-020
- Terminal Connections: See Diagram
- Terminals: Finish – Matte Tin Annealed over Copper Leadframe. Solderable per MIL-STD-202, Method 208 (E3)
- Weight: 0.33 grams (Approximate)



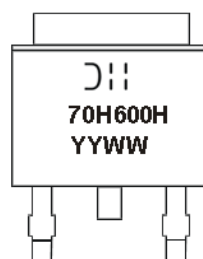
Ordering Information (Note 4)

Part Number	Package	Packing	
		Qty.	Carrier
DMJ70H600HK3-13	TO252 (DPAK)	2,500	Tape & Reel

Notes:

1. EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant. All applicable RoHS exemptions applied.
2. See <https://www.diodes.com/quality/lead-free/> for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
4. For packaging details, go to our website at <https://www.diodes.com/design/support/packaging/diodes-packaging/>.

Marking Information



≡ = Manufacturer's Marking
 70H600H = Product Type Marking Code
 YYWW = Date Code Marking
 YY = Last Two Digits of Year (ex: 22 = 2022)
 WW = Week Code (01 to 53)

Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Drain-Source Voltage	V _{DSS}	700	V
Gate-Source Voltage	V _{GSS}	±30	V
Continuous Drain Current (Note 5) V _{GS} = 10V	I _D	7.6 4.8	A
Maximum Body Diode Forward Current (Note 5)	I _S	7.6	A
Pulsed Drain Current (10μs Pulse, Duty Cycle = 1%)	I _{DM}	30	A
Pulsed Body Diode Continuous Current (10μs Pulse, Duty Cycle = 1%)	I _{SM}	30	A
Avalanche Current, L = 60mH	I _{AS}	1.8	A
Avalanche Energy, L = 60mH	E _{AS}	97	mJ

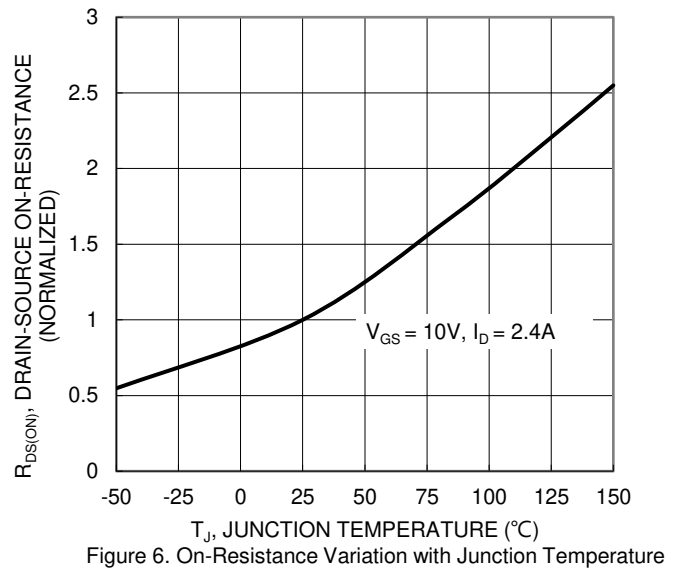
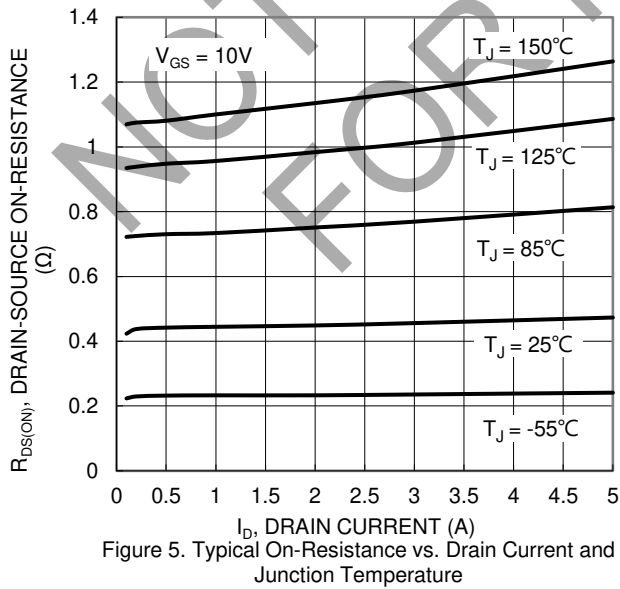
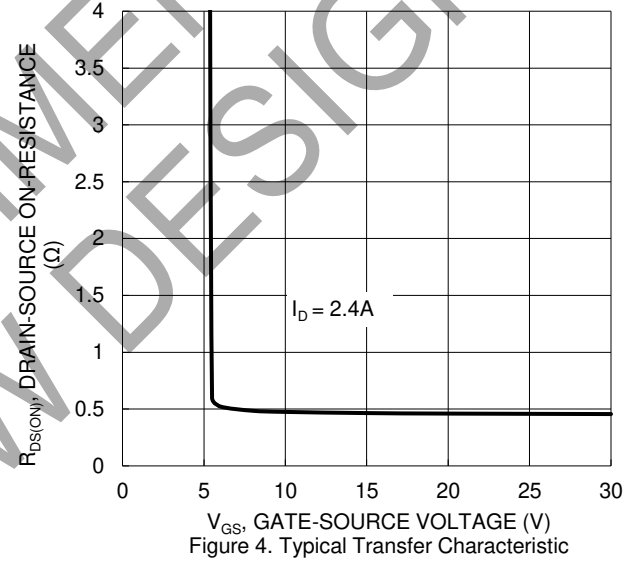
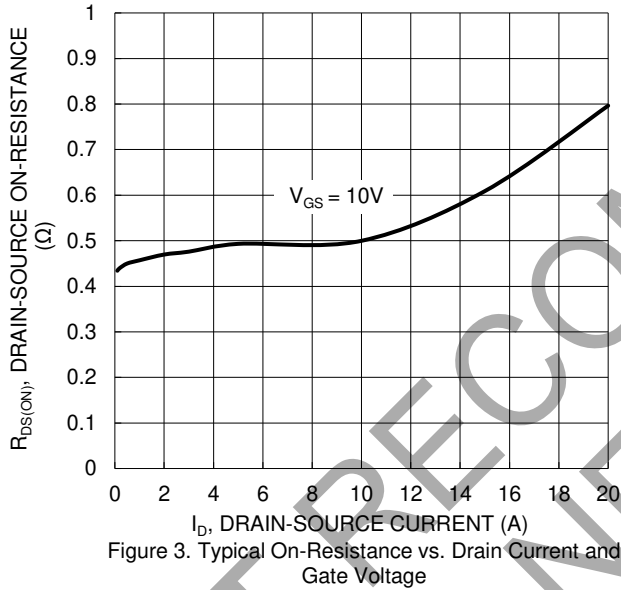
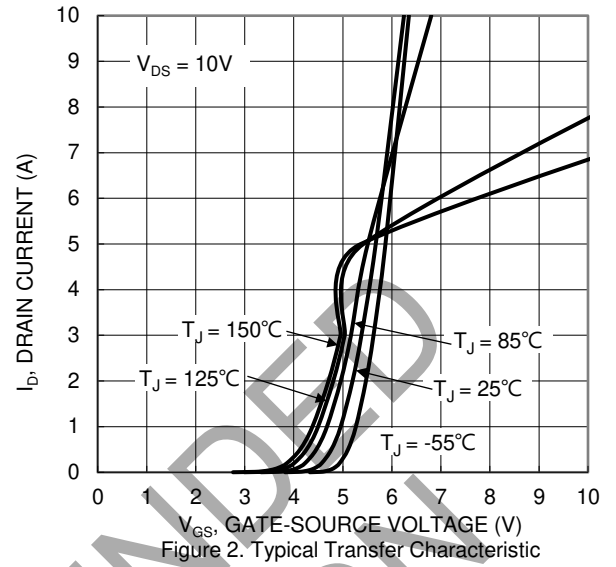
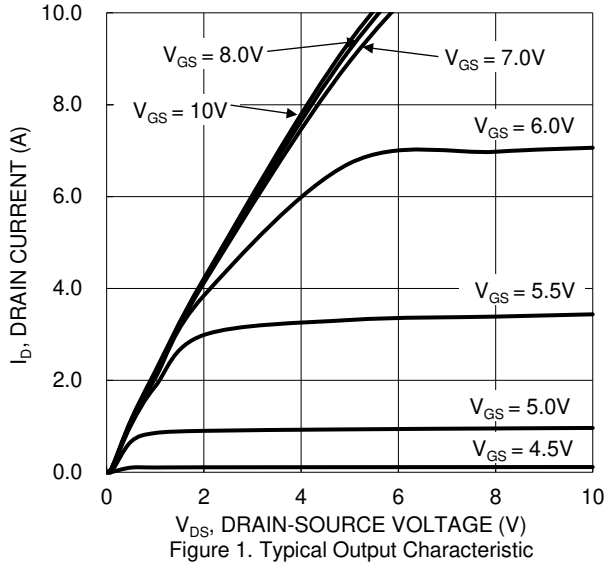
Thermal Characteristics (@T_A = +25°C, unless otherwise specified.)

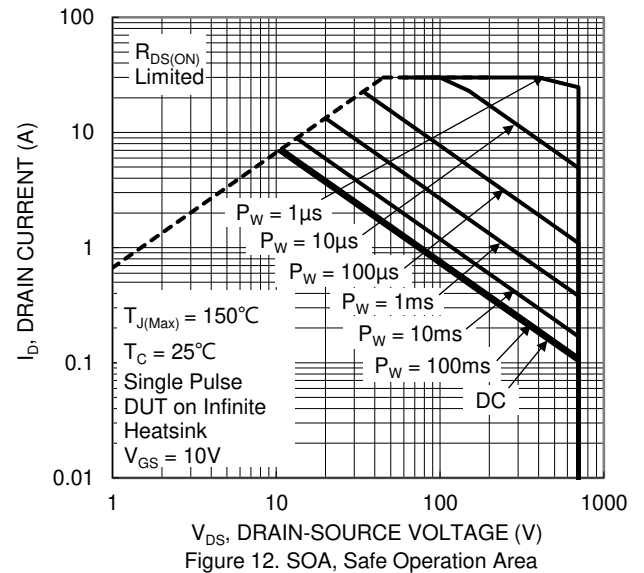
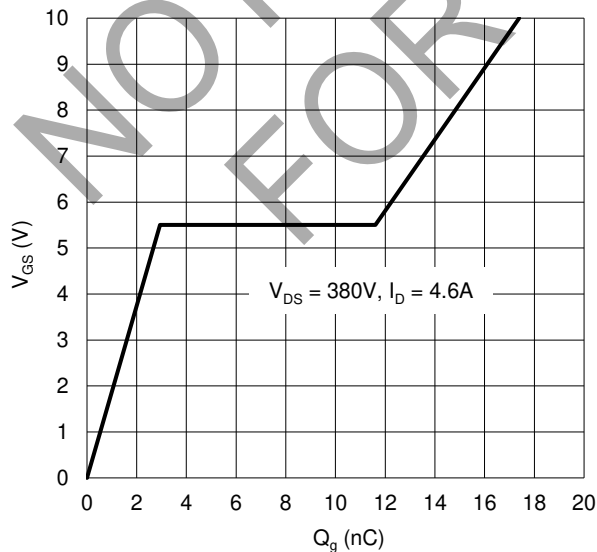
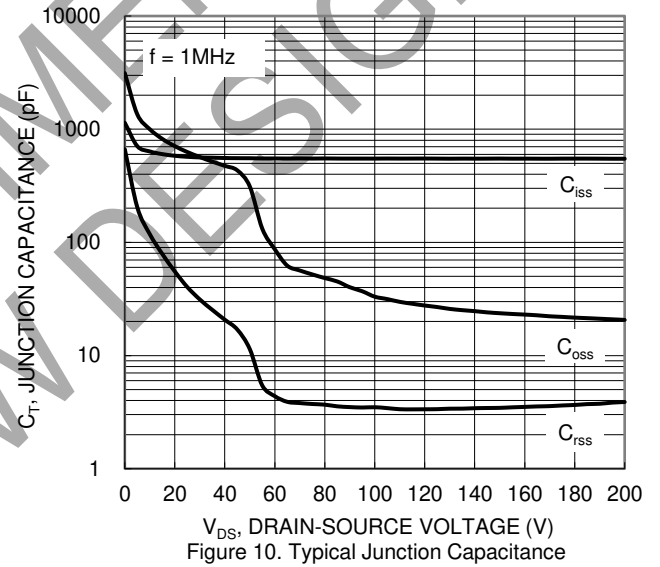
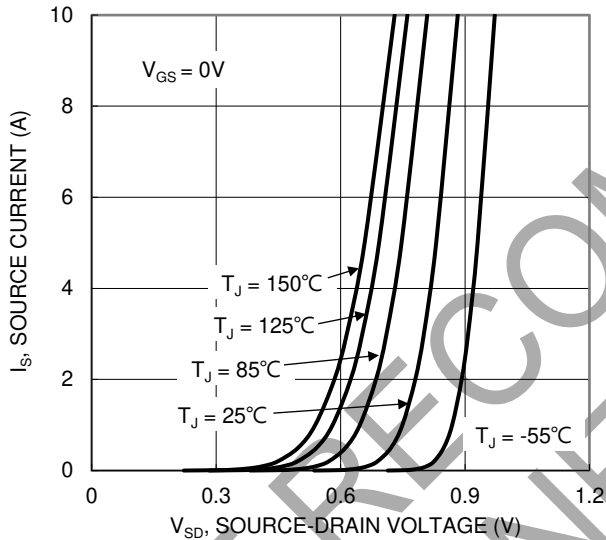
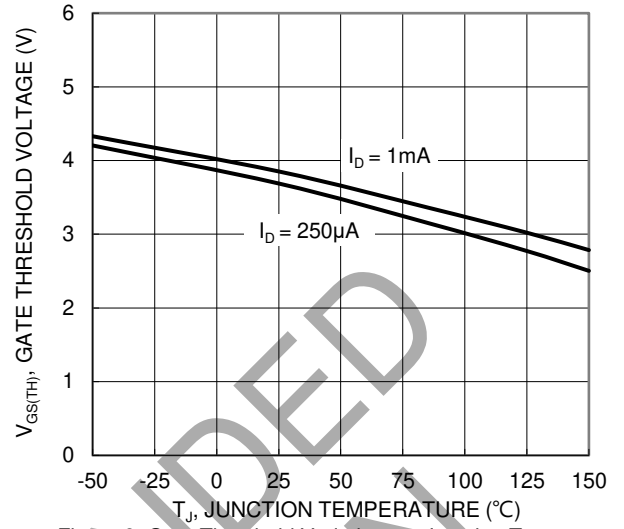
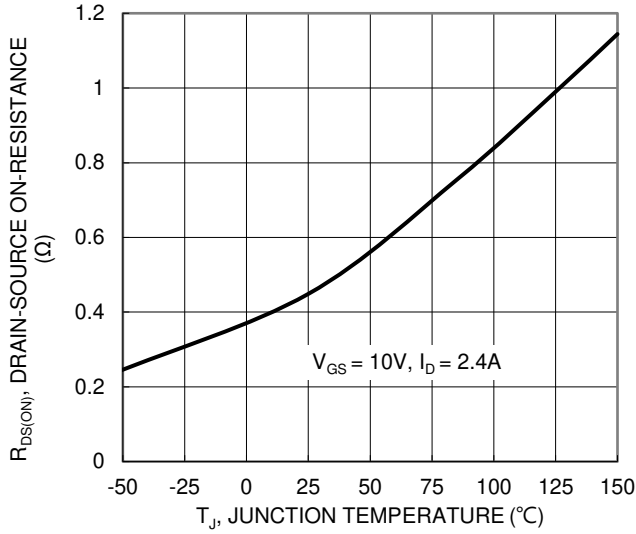
Characteristic	Symbol	Value	Unit
Total Power Dissipation (Note 5)	P _D	90 36	W
Thermal Resistance, Junction to Ambient (Note 6)	R _{θJA}	45	°C/W
Thermal Resistance, Junction to Case (Note 5)	R _{θJC}	1.4	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-55 to +150	°C

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
OFF CHARACTERISTICS (Note 7)						
Drain-Source Breakdown Voltage	BV _{DSS}	700	—	—	V	V _{GS} = 0V, I _D = 250μA
Zero Gate Voltage Drain Current	I _{DSS}	—	—	1	μA	V _{DS} = 700V, V _{GS} = 0V
Gate-Source Leakage	I _{GSS}	—	—	100	nA	V _{GS} = ±30V, V _{DS} = 0V
ON CHARACTERISTICS (Note 7)						
Gate Threshold Voltage	V _{GS(TH)}	2	3.7	5	V	V _{DS} = V _{GS} , I _D = 250μA
Static Drain-Source On-Resistance	R _{DS(ON)}	—	0.45	0.6	Ω	V _{GS} = 10V, I _D = 2.4A
Diode Forward Voltage	V _{SD}	—	0.8	1.3	V	V _{GS} = 0V, I _S = 4.6A
DYNAMIC CHARACTERISTICS (Note 8)						
Input Capacitance	C _{iss}	—	570	—	pF	V _{DS} = 25V, f = 1MHz V _{GS} = 0V
Output Capacitance	C _{oss}	—	628	—		
Reverse Transfer Capacitance	C _{rss}	—	40	—		
Gate Resistance	R _G	—	2.5	—	Ω	V _{DS} = 0V, V _{GS} = 0V, f = 1MHz
Total Gate Charge	Q _G	—	17.4	—	nC	V _{DD} = 380V, I _D = 4.6A V _{GS} = 10V
Gate-Source Charge	Q _{GS}	—	3	—		
Gate-Drain Charge	Q _{GD}	—	8.7	—		
Turn-On Delay Time	t _{D(ON)}	—	20	—	ns	V _{DD} = 380V, V _{GS} = 10V R _G = 25Ω, I _D = 4.6A
Turn-On Rise Time	t _R	—	50	—		
Turn-Off Delay Time	t _{D(OFF)}	—	76	—		
Turn-Off Fall Time	t _F	—	37	—		
Body Diode Reverse Recovery Time	t _{RR}	—	194	—	ns	I _S = 4A, dI/dt = 100A/μs
Body Diode Reverse Recovery Charge	Q _{RR}	—	1.6	—	μC	

Notes: 5. Device mounted on infinite heatsink.
6. Device mounted on FR-4 substrate PC board, 2oz copper, with 1inch square copper plate.
7. Short duration pulse test used to minimize self-heating effect.
8. Guaranteed by design. Not subject to production testing.





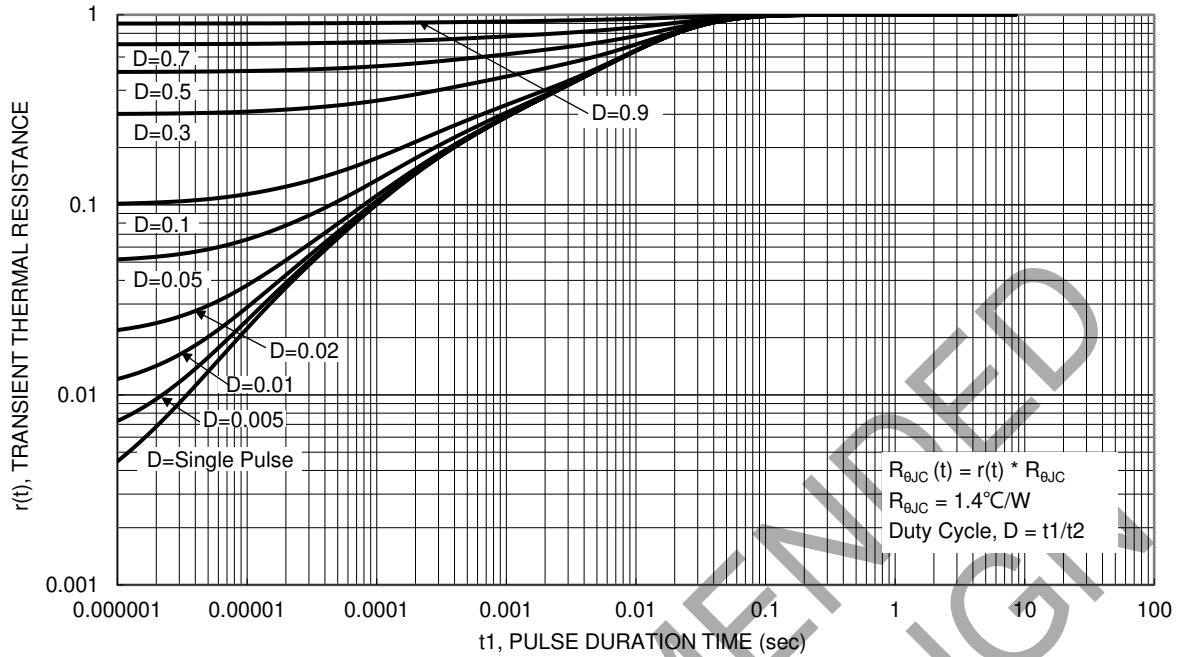
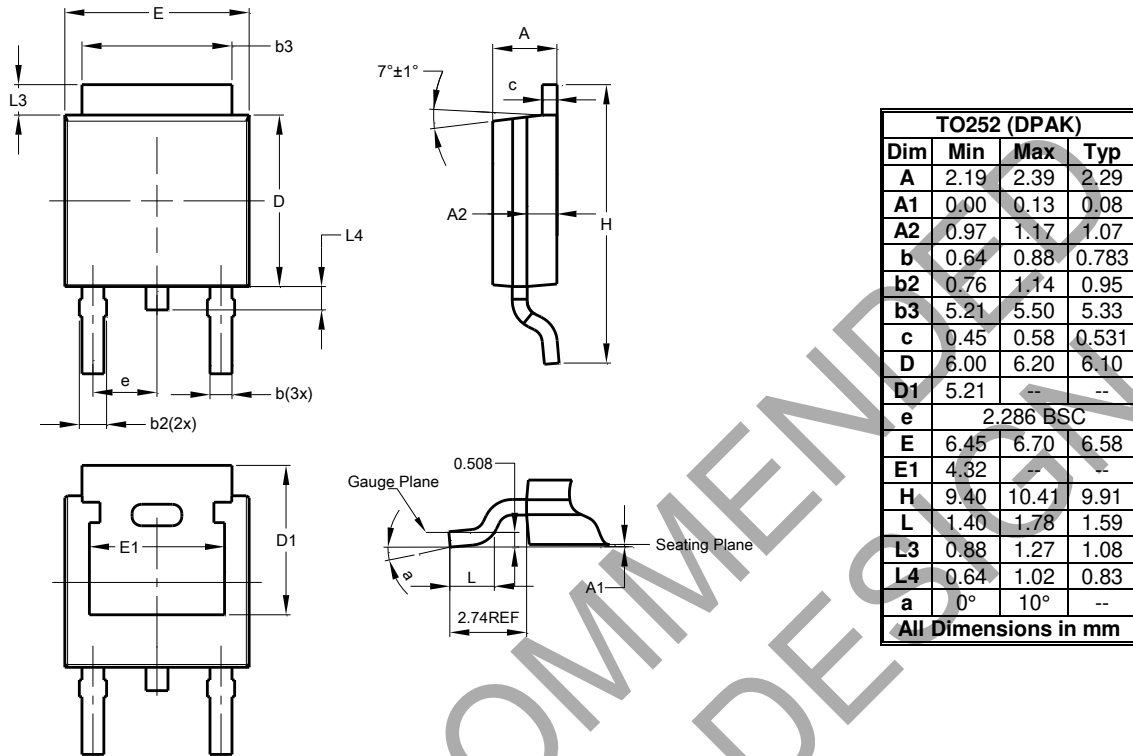


Figure 13. Transient Thermal Resistance

Package Outline Dimensions

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

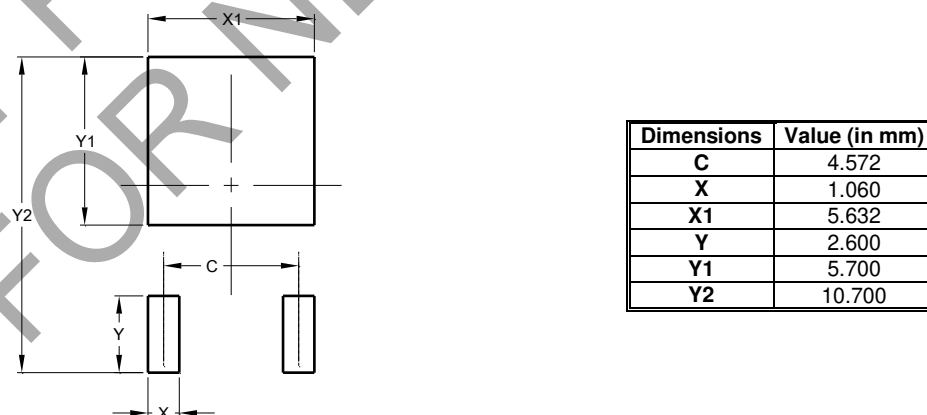
TO252 (DPAK)



Suggested Pad Layout

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

TO252 (DPAK)



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