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Product Termination Notification

Product Group: SIL/Wednesday June 10, 2026/PTN-SIL-049-2026-REV-0



Conversion to Copper (Cu) Wire – SQ2319ADS-T1_BE3

For further information, please contact your regional Vishay office.

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Description of Change: The affected part number listed in this notification will be converted to a Copper wire material set. The new ordering code is SQ2319CES-T1_GE3, which has the exact same product performance and fit as SQ2319ADS-T1_BE3. There will be no change to the wafer fab or assembly location. There will be no changes to the parameters on the datasheet (reference: SQ2319CES Doc # 62475 Rev. A).

Reason for Change: Standardization of materials

Expected Influence on Quality/Reliability/Performance: None

Part Numbers/Series/Families Affected: SQ2319ADS-T1_BE3

Vishay Brand(S): Vishay Siliconix

Time Schedule:

Last Time Buy Date: Sunday December 20, 2026

Last Time Ship Date: Monday June 21, 2027

Sample Availability: Qualified samples of replacement product are available on request

Product Identification: SQ2319CES-T1_GE3

Qualification Data: AEC Q101 qualification data of replacement product is available. Qualification PPAP is available now.

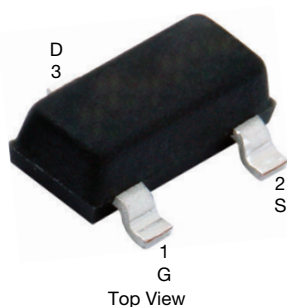
This PTN is considered approved, without further notification, unless we receive specific customer concerns before Sunday October 11, 2026 or as specified by contract.

Issued By: Lance Gurrola, automostechsupport@vishay.com



Automotive P-Channel 40 V (D-S) MOSFET

SOT-23 (TO-236)

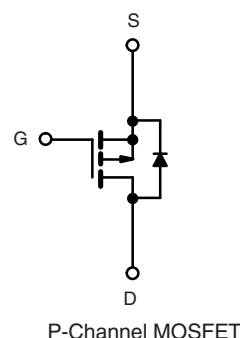


Marking Code: TF

PRODUCT SUMMARY	
V_{DS} (V)	-40
$R_{DS(on)}$ (Ω) at $V_{GS} = -10$ V	0.075
$R_{DS(on)}$ (Ω) at $V_{GS} = -4.5$ V	0.145
I_D (A)	-4.6
Configuration	Single

FEATURES

- TrenchFET® power MOSFET
- AEC-Q101 qualified
- 100 % R_g and UIS tested
- Material categorization:
for definitions of compliance please see
www.vishay.com/doc?99912

AUTOMOTIVE
GRADERoHS
COMPLIANT
HALOGEN
FREE

ORDERING INFORMATION	
Package	SOT-23
Lead (Pb)-free and halogen-free	SQ2319CES (for detailed order number please see www.vishay.com/doc?79771)

ABSOLUTE MAXIMUM RATINGS (T _C = 25 °C, unless otherwise noted)				
PARAMETER		SYMBOL	LIMIT	UNIT
Drain-source voltage		V _{DS}	-40	V
Gate-source voltage		V _{GS}	± 20	
Continuous drain current	T _C = 25 °C	I _D	-4.6	A
	T _C = 125 °C		-2.6	
Continuous source current (diode conduction)		I _S	-2.6	
Pulsed drain current ^a		I _{DM}	-18	
Single pulse avalanche current	L = 0.1 mH	I _{AS}	-13	
Single pulse avalanche energy		E _{AS}	8.4	mJ
Maximum power dissipation	T _C = 25 °C	P _D	3.0	W
	T _C = 125 °C		1.0	
Operating junction and storage temperature range		T _J , T _{sta}	-55 to +175	°C

THERMAL RESISTANCE RATINGS				
PARAMETER		SYMBOL	LIMIT	UNIT
Junction-to-Ambient	PCB mount ^b	R_{thJA}	166	$^\circ\text{C}/\text{W}$
Junction-to-Foot (Drain)		R_{thJF}	50	

Notes

- a. Pulse test; pulse width $\leq 300 \mu\text{s}$, duty cycle $\leq 2\%$
b. When mounted on 1" square PCB (FR4 material)



SPECIFICATIONS (T _C = 25 °C, unless otherwise noted)							
PARAMETER	SYMBOL	TEST CONDITIONS		MIN.	TYP.	MAX.	UNIT
Static							
Drain-source breakdown voltage	V _{DS}	V _{GS} = 0, I _D = -250 μA		-40	-	-	V
Gate-source threshold voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250 μA		-1.5	-2.0	-2.5	
Gate-source leakage	I _{GSS}	V _{DS} = 0 V, V _{GS} = ± 20 V		-	-	± 100	nA
Zero gate voltage drain current	I _{DSS}	V _{GS} = 0 V	V _{DS} = -40 V	-	-	-1	μA
		V _{GS} = 0 V	V _{DS} = -40 V, T _J = 125 °C	-	-	-50	
		V _{GS} = 0 V	V _{DS} = -40 V, T _J = 150 °C	-	-	-150	
On-state drain current ^a	I _{D(on)}	V _{GS} = -10 V	V _{DS} ≤ -5 V	-10	-	-	A
Drain-source on-state resistance ^a	R _{DS(on)}	V _{GS} = -10 V	I _D = -3 A	-	0.068	0.075	Ω
		V _{GS} = -10 V	I _D = -3 A, T _J = 125 °C	-	0.105	-	
		V _{GS} = -10 V	I _D = -3 A, T _J = 175 °C	-	0.118	-	
		V _{GS} = -4.5 V	I _D = -2.4 A	-	0.105	0.145	
Forward transconductance ^b	g _{fs}	V _{DS} = -5 V, I _D = -3 A		-	8	-	S
Dynamic ^b							
Input capacitance	C _{iss}	V _{GS} = 0 V	V _{DS} = -20 V, f = 1 MHz	-	491	620	pF
Output capacitance	C _{oss}			-	89	120	
Reverse transfer capacitance	C _{rss}			-	54	70	
Total gate charge ^c	Q _g	V _{GS} = -10 V	V _{DS} = -20 V, I _D = -3 A	-	11	16	nC
Gate-source charge ^c	Q _{gs}			-	2.1	-	
Gate-drain charge ^c	Q _{gd}			-	2.6	-	
Gate resistance	R _g	f = 1 MHz		2.1	4.4	6.4	Ω
Turn-on delay time ^c	t _{d(on)}	V _{DD} = -20 V, R _L = 6.7 Ω I _D ≅ -3 A, V _{GEN} = -10 V, R _g = 1 Ω		-	8	12	ns
Rise time ^c	t _r			-	3	28	
Turn-off delay time ^c	t _{d(off)}			-	18	27	
Fall time ^c	t _f			-	3	27	
Source-Drain Diode Ratings and Characteristics ^b							
Pulsed current ^a	I _{SM}			-	-	-18	A
Forward voltage	V _{SD}	I _F = -1.5 A, V _{GS} = 0		-	-0.8	-1.2	V
Body diode reverse recovery time	t _{rr}	I _F = -1.5 A, di/dt = 100 A/μs		-	16	32	ns
Body diode reverse recovery charge	Q _{rr}			-	13	26	nC
Reverse recovery fall time	t _a			-	13	-	ns
Reverse recovery rise time	t _b			-	3	-	
Body diode peak reverse recovery current	I _{RM(REC)}			-	-1.9	-	A

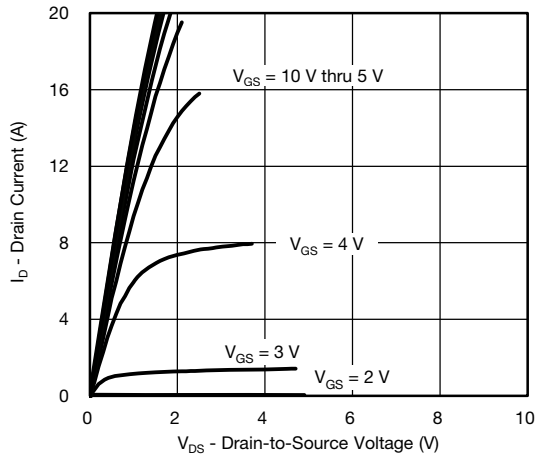
Notes

- a. Pulse test; pulse width $\leq 300\text{ }\mu\text{s}$, duty cycle $\leq 2\%$
b. Guaranteed by design, not subject to production testing
c. Independent of operating temperature

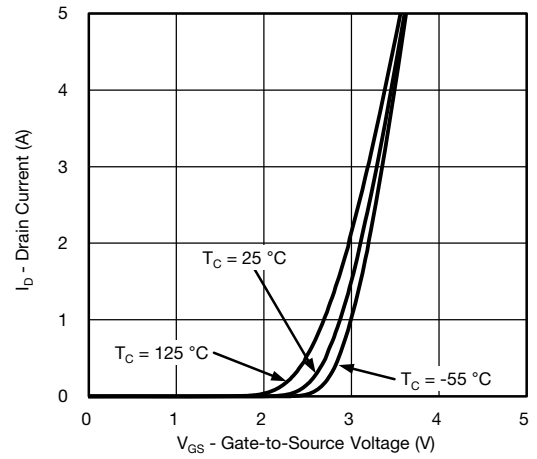
Stresses beyond those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated in the operational sections of the specifications is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.



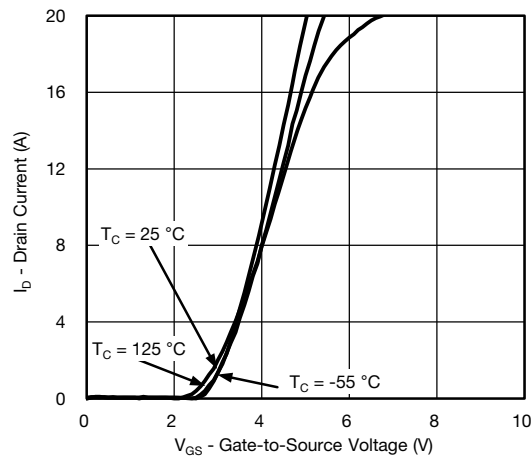
TYPICAL CHARACTERISTICS ($T_A = 25\text{ }^{\circ}\text{C}$, unless otherwise noted)



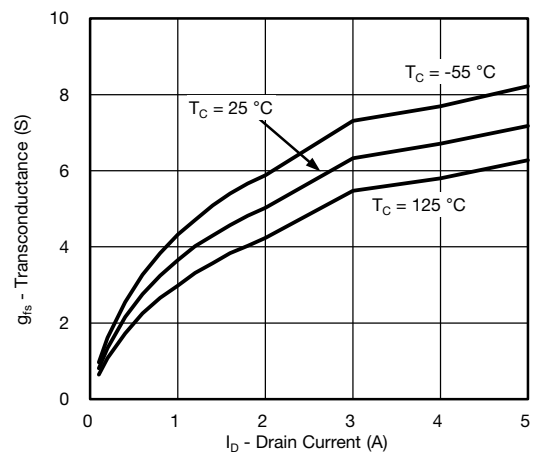
Output Characteristics



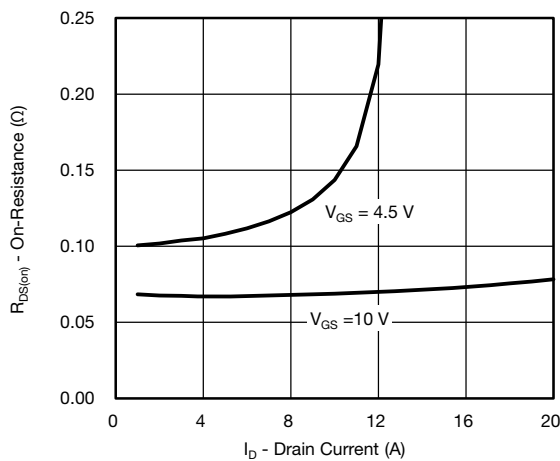
Transfer Characteristics



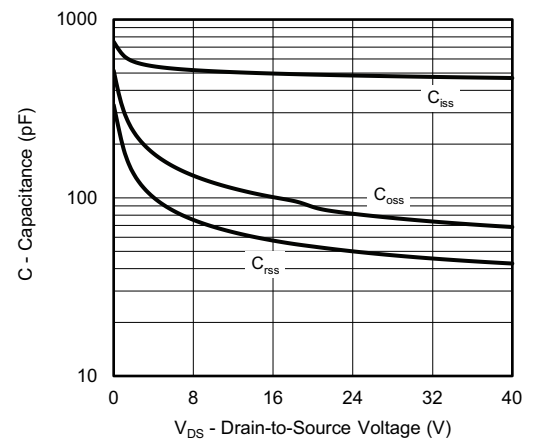
Transfer Characteristics



Transconductance



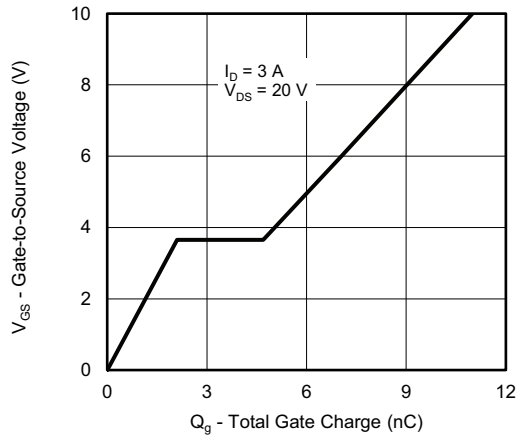
On-Resistance vs. Drain Current



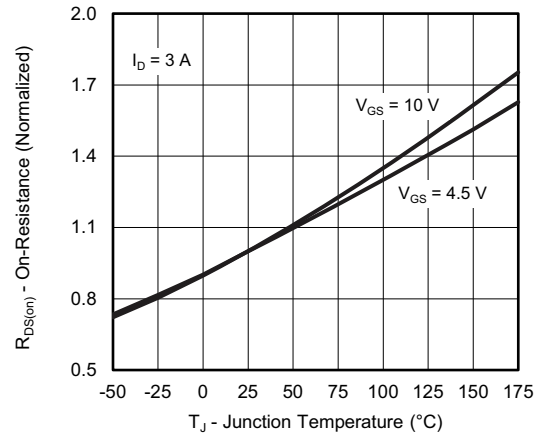
Capacitance



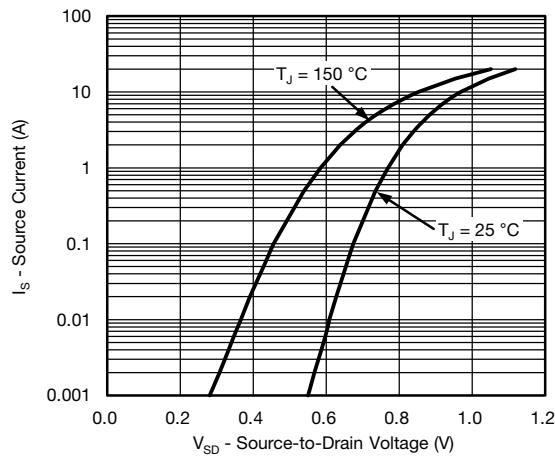
TYPICAL CHARACTERISTICS ($T_A = 25\text{ }^{\circ}\text{C}$, unless otherwise noted)



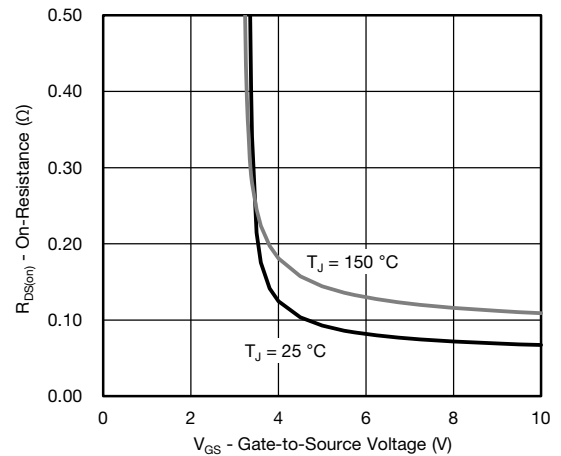
Gate Charge



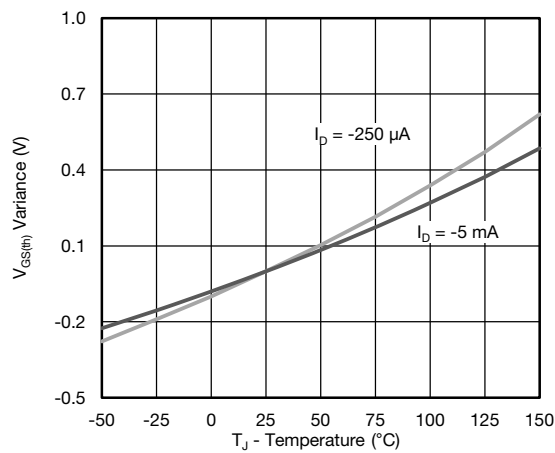
On-Resistance vs. Junction Temperature



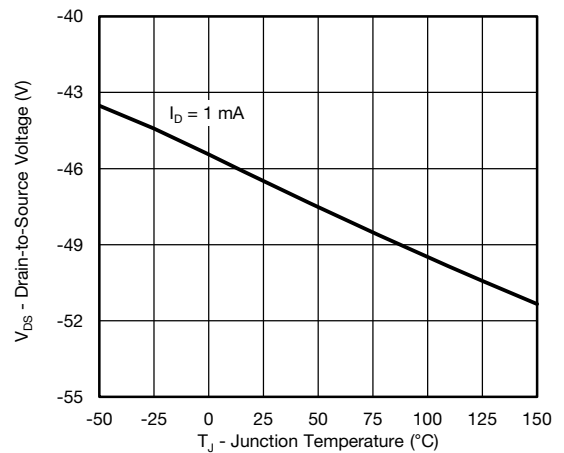
Source Drain Diode Forward Voltage



On-Resistance vs. Gate-to-Source Voltage



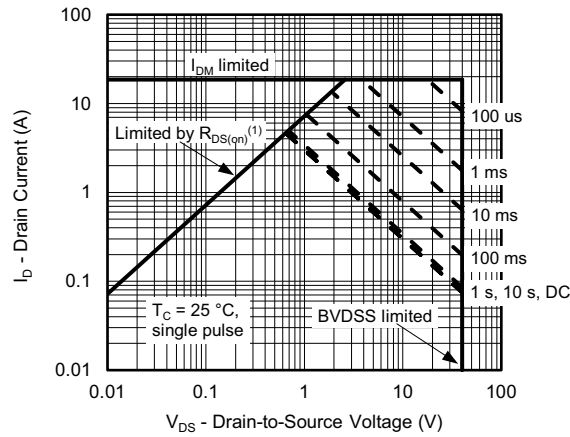
Threshold Voltage



Drain Source Breakdown vs. Junction Temperature



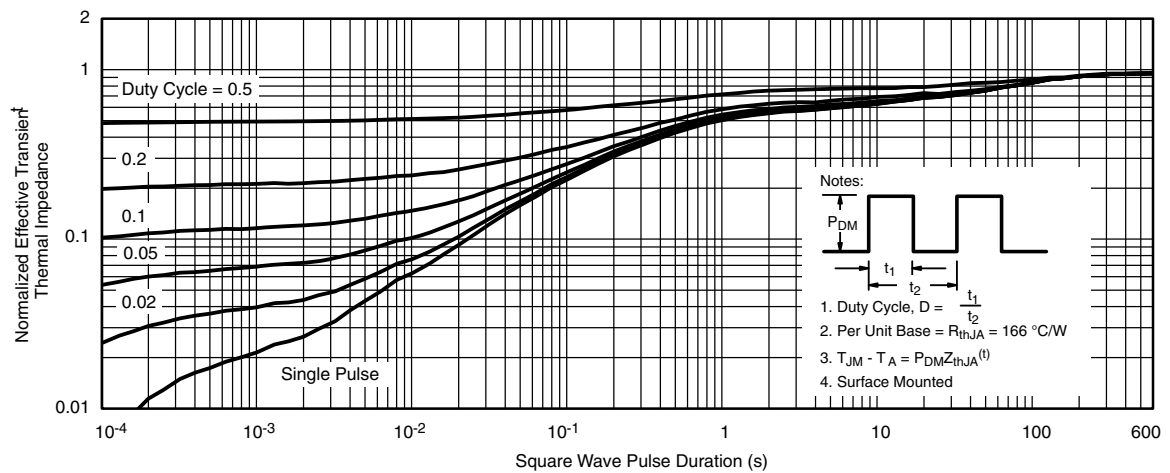
THERMAL RATINGS ($T_A = 25\text{ }^{\circ}\text{C}$, unless otherwise noted)



Safe Operating Area

Note

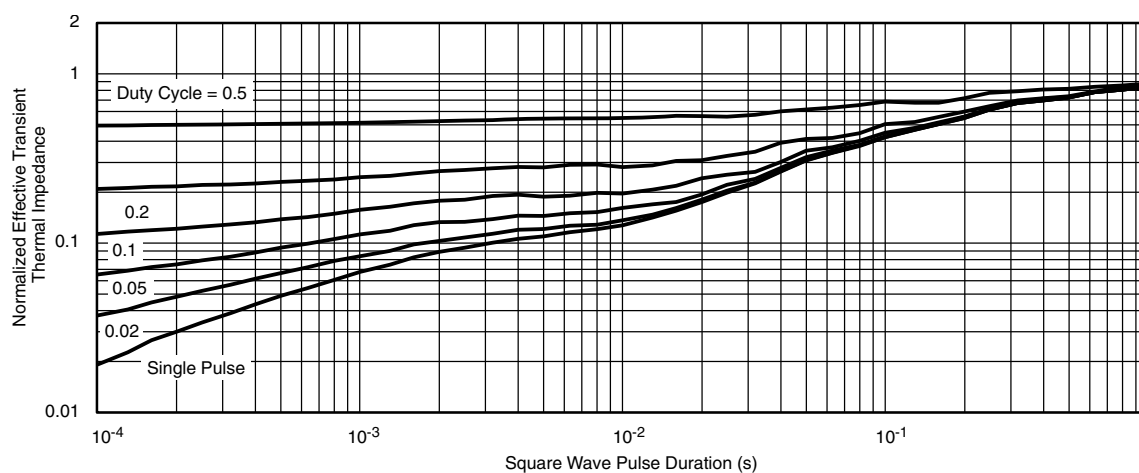
- a. $V_{GS} >$ minimum V_{GS} at which $R_{DS(on)}$ is specified



Normalized Thermal Transient Impedance, Junction-to-Ambient



THERMAL RATINGS ($T_A = 25\text{ }^{\circ}\text{C}$, unless otherwise noted)



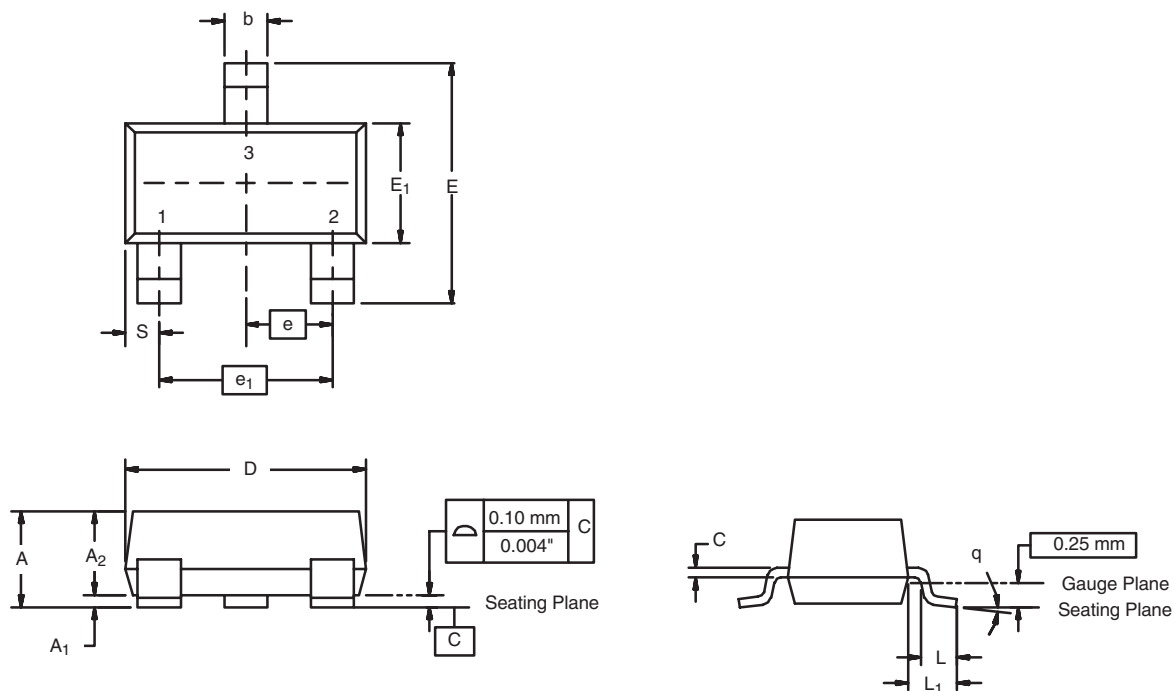
Normalized Thermal Transient Impedance, Junction-to-Foot

Note

- The characteristics shown in the two graphs
 - Normalized Transient Thermal Impedance Junction-to-Ambient ($25\text{ }^{\circ}\text{C}$)
 - Normalized Transient Thermal Impedance Junction-to-Case ($25\text{ }^{\circ}\text{C}$)are given for general guidelines only to enable the user to get a “ball park” indication of part capabilities. The data are extracted from single pulse transient thermal impedance characteristics which are developed from empirical measurements. The latter is valid for the part mounted on printed circuit board - FR4, size 1" x 1" x 0.062", double sided with 2 oz. copper, 100 % on both sides. The part capabilities can widely vary depending on actual application parameters and operating conditions



SOT-23 (TO-236): 3-LEAD

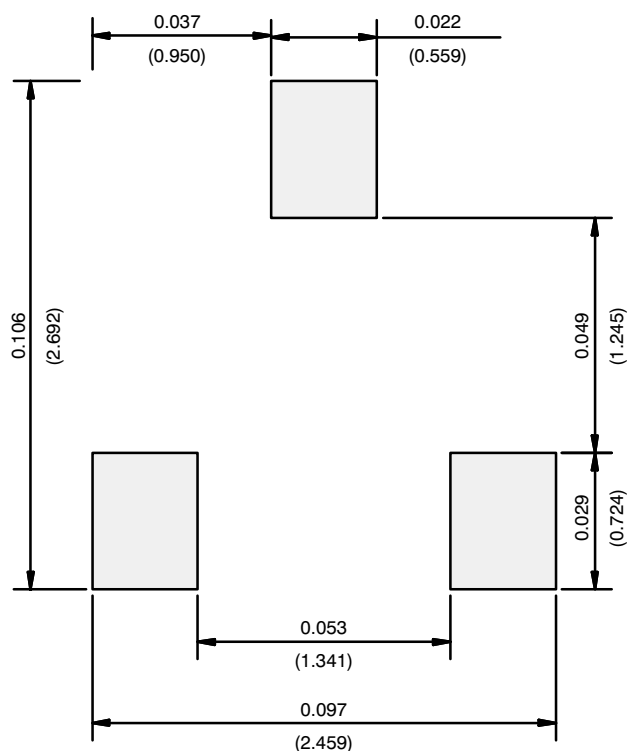


Dim	MILLIMETERS		INCHES	
	Min	Max	Min	Max
A	0.89	1.12	0.035	0.044
A ₁	0.01	0.10	0.0004	0.004
A ₂	0.88	1.02	0.0346	0.040
b	0.35	0.50	0.014	0.020
c	0.085	0.18	0.003	0.007
D	2.80	3.04	0.110	0.120
E	2.10	2.64	0.083	0.104
E ₁	1.20	1.40	0.047	0.055
e	0.95 BSC		0.0374 Ref	
e ₁	1.90 BSC		0.0748 Ref	
L	0.40	0.60	0.016	0.024
L ₁	0.64 Ref		0.025 Ref	
S	0.50 Ref		0.020 Ref	
q	3°	8°	3°	8°

ECN: S-03946-Rev. K, 09-Jul-01
DWG: 5479



RECOMMENDED MINIMUM PADS FOR SOT-23



Recommended Minimum Pads
Dimensions in Inches/(mm)

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