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Product Information Notification

Product Group: SIL/Friday September 25, 2026/PIN-SIL-083-2026-REV-0



Revision in SQJ142EP Datasheet from Rev. B to Rev. C

For further information, please contact your regional Vishay office.

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Description of Change: As part of Vishay Siliconix commitment to quality, we would like to extend to you a courtesy notification of a datasheet revision for SQJ142EP (Doc #77422 Rev C attached). There is no change to the materials or processes used in the manufacture of this part.

The changes per this Advisory reflect updates as follows:

- Update Crss typ from 30pF to 53pF and Crss max from 42pF to 75pF
- Update capacitance graph
- Correct typo on Qgd typ from 6.7nC to 6nC

This notification is for information only and there is no need for a response.

Reason for Change: Datasheet Revision

Expected Influence on Quality/Reliability/Performance: None

Part Numbers/Series/Families Affected: SQJ142EP-T1_GE3, SQJ142EP-T1_JE3, SQJ142EP-T2_GE3, SQJ142EP-T2_JE3,

Vishay Brand(S): Vishay Siliconix

Time Schedule:

Start Shipment Date: Thursday September 24, 2026

Sample Availability: This is a datasheet revision only. There is no change to the materials or processes used in the manufacture of this part.

Product Identification: N/A

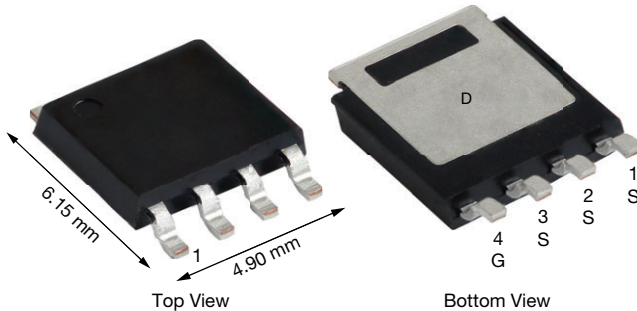
Qualification Data: N/A

Issued By: Lance Gurrola, automostechsupport@vishay.com



Automotive N-Channel 40 V (D-S) 175 °C MOSFET

PowerPAK® SO-8L

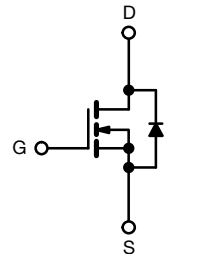


FEATURES

- TrenchFET® Gen IV power MOSFET
- AEC-Q101 qualified
- 100 % R_g and UIS tested
- Q_{gd}/Q_{gs} ratio < 1 optimizes switching characteristics
- Material categorization:
for definitions of compliance please see www.vishay.com/doc?99912



RoHS
COMPLIANT
HALOGEN
FREE



N-Channel MOSFET

PRODUCT SUMMARY

V_{DS} (V)	40
$R_{DS(on)}$ (Ω) at $V_{GS} = 10$ V	0.0036
I_D (A)	167
Configuration	Single

ORDERING INFORMATION

Package	PowerPAK SO-8L
Lead (Pb)-free and halogen-free	SQJ142EP (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	I_D	$T_C = 25$ °C	167
		$T_C = 125$ °C	97
Continuous source current (diode conduction)	I_S	134	A
Pulsed drain current ^a	I_{DM}	315	
Single pulse avalanche current	I_{AS}	30	
Single pulse avalanche energy	E_{AS}	45	mJ
Maximum power dissipation ^a	P_D	$T_C = 25$ °C	191
		$T_C = 125$ °C	64
Operating junction and storage temperature range	T_J, T_{stg}	-55 to +175	°C
Soldering recommendations (peak temperature) ^c		260	

THERMAL RESISTANCE RATINGS

PARAMETER	SYMBOL	LIMIT	UNIT
Junction-to-ambient	R_{thJA}	68	°C/W
Junction-to-case (drain)	R_{thJC}	0.79	

Notes

- a. Pulse test; pulse width ≤ 300 μ s, duty cycle ≤ 2 %
b. When mounted on 1" square PCB (FR4 material)
c. See solder profile (www.vishay.com/doc?73257). The end of the lead terminal is exposed copper (not plated) as a result of the singulation process in manufacturing. A solder fillet at the exposed copper tip cannot be guaranteed and is not required to ensure adequate bottom side solder interconnection



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		2.5	3.0	3.5	
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 = 175 °C	-	-	250	
On-state drain current ^a	I _{D(on)}	V _{GS} = 10 V	V _{DS} ≥ 5 V	30	-	-	A
Drain-source on-state resistance ^a	R _{DS(on)}	V _{GS} = 10 V	I _D = 15 A	-	0.0028	0.0036	Ω
		V _{GS} = 10 V	I _D = 15 A, T _J = 125 °C	-	-	0.0057	
		V _{GS} = 10 V	I _D = 15 A, T _J = 175 °C	-	-	0.0068	
Forward transconductance ^b	g _{fs}	V _{DS} = 15 V, I _D = 10 A		-	50	-	S
Dynamic ^b							
Input capacitance	C _{iss}	V _{GS} = 0 V	V _{DS} = 25 V, f = 1 MHz	-	1890	2650	pF
Output capacitance	C _{oss}			-	625	875	
Reverse transfer capacitance	C _{rss}			-	53	75	
Total gate charge ^c	Q _g	V _{GS} = 10 V	V _{DS} = 20 V, I _D = 10 A	-	32	45	nC
Gate-source charge ^c	Q _{gs}			-	9	-	
Gate-drain charge ^c	Q _{gd}			-	6	-	
Gate resistance	R _g	f = 1 MHz		1.2	3.5	5.6	Ω
Turn-on delay time ^c	t _{d(on)}	V _{DD} = 20 V, R _L = 2 Ω I _D ≅ 10 A, V _{GEN} = 10 V, R _g = 1 Ω		-	11	15.6	ns
Rise time ^c	t _r			-	4.2	6.0	
Turn-off delay time ^c	t _{d(off)}			-	23.4	33	
Fall time ^c	t _f			-	7.1	10	
Source-Drain Diode Ratings and Characteristics ^b							
Pulsed current ^a	I _{SM}			-	-	315	A
Forward voltage	V _{SD}	I _F = 15 A, V _{GS} = 0 V		-	-	1.1	V
Body diode reverse recovery time	t _{rr}	I _F = 40 A, di/dt = 100 A/μs		-	31.8	44	ns
Body diode reverse recovery charge	Q _{rr}			-	20.4	28.6	nC
Reverse recovery fall time	t _a			-	16.1	22.6	ns
Reverse recovery rise time	t _b			-	15.7	22	
Body diode peak reverse recovery current	I _{RM(REC)}			-	1.1	1.5	A

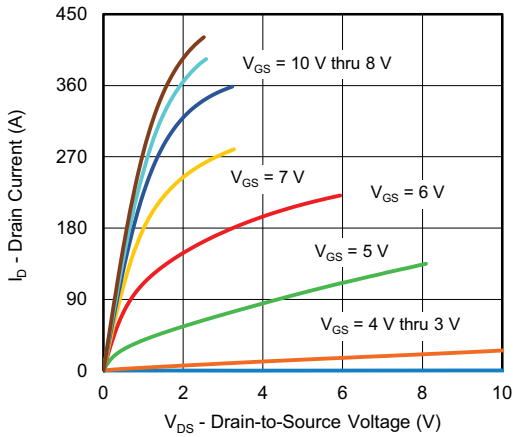
Notes

- 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

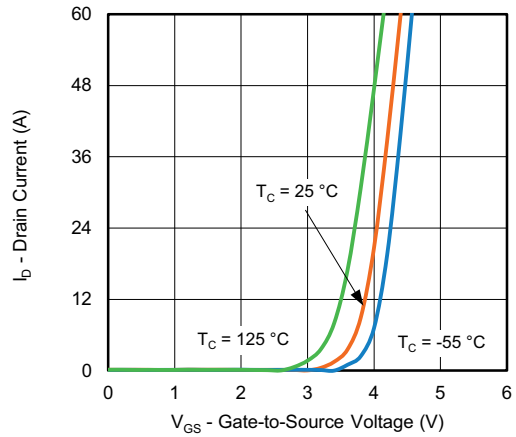
Stresses beyond those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated in the operational sections of the specifications is not implied. Exposure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



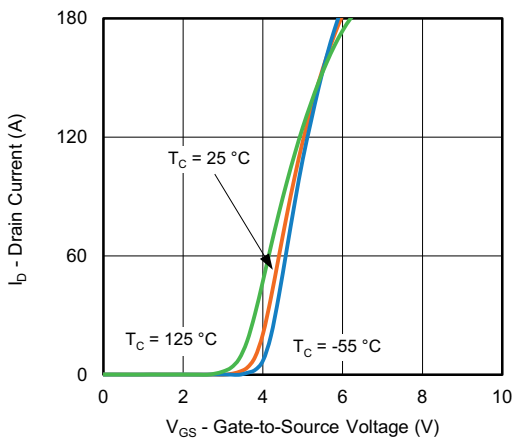
TYPICAL CHARACTERISTICS ($T_A = 25\text{ }^{\circ}\text{C}$, unless otherwise noted)



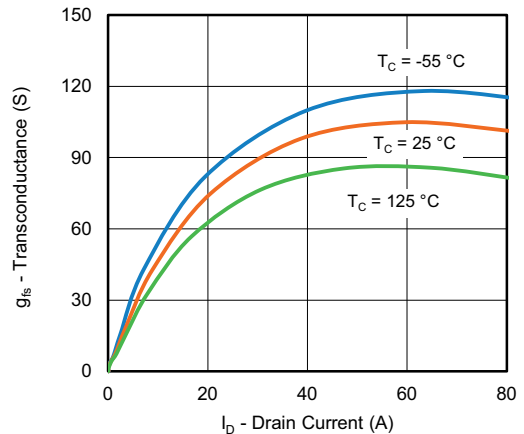
Output Characteristics



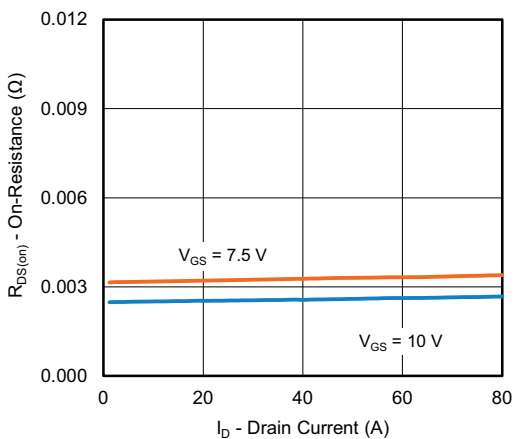
Transfer Characteristics



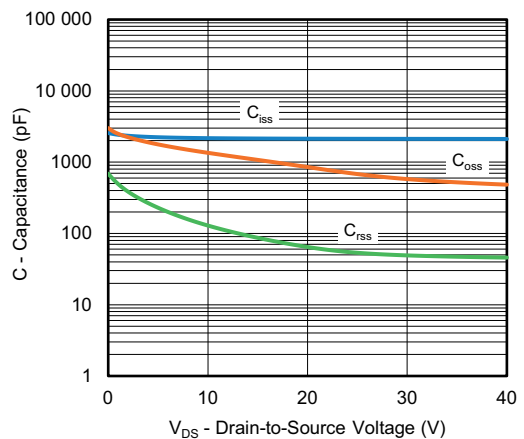
Transfer Characteristics



Transconductance



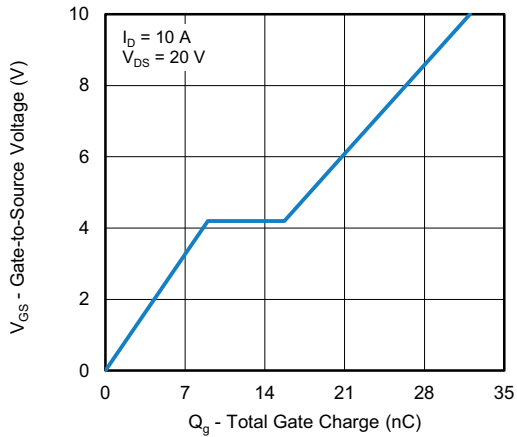
On-Resistance vs. Drain Current



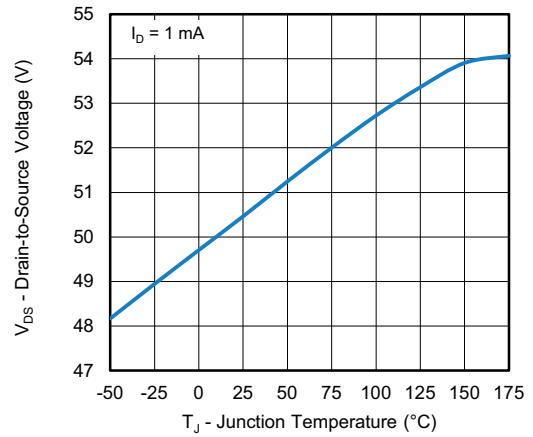
Capacitance



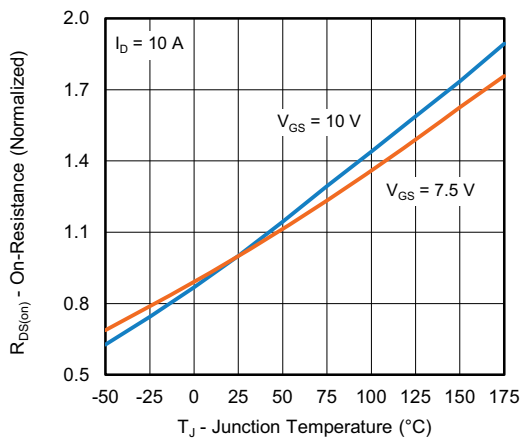
TYPICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$, unless otherwise noted)



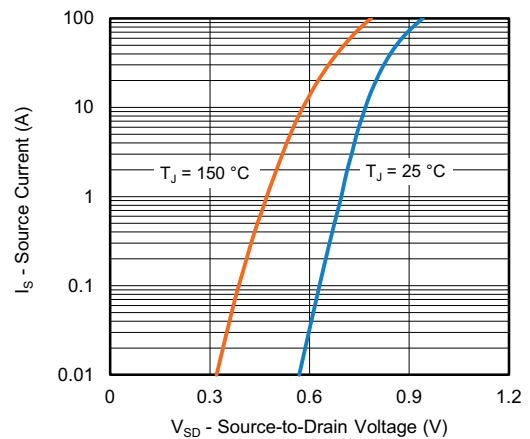
Gate Charge



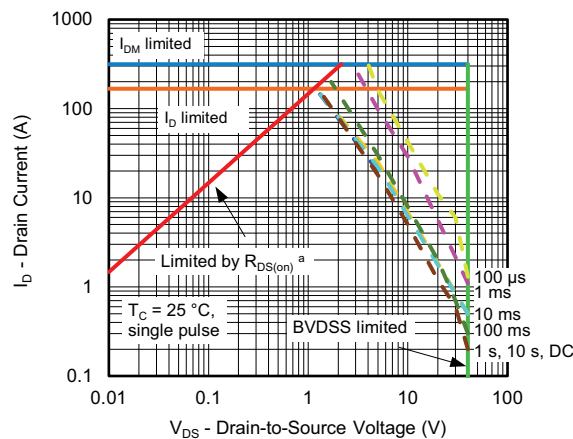
Drain Source Breakdown vs. Junction Temperature



On-Resistance vs. Junction Temperature



Source Drain Diode Forward Voltage



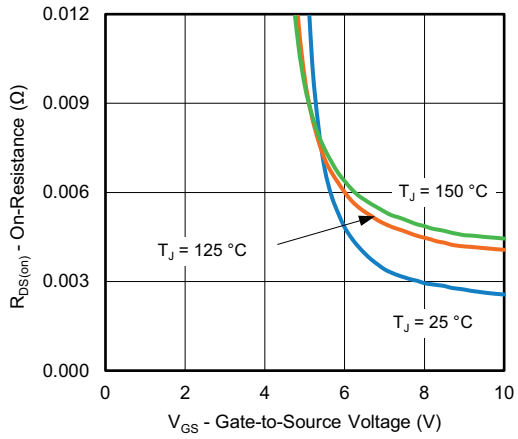
Safe Operating Area

Note

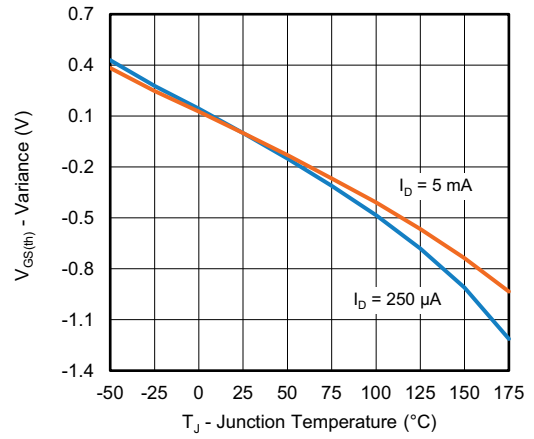
a. $V_{GS} >$ minimum V_{GS} at which $R_{DS(on)}$ is specified



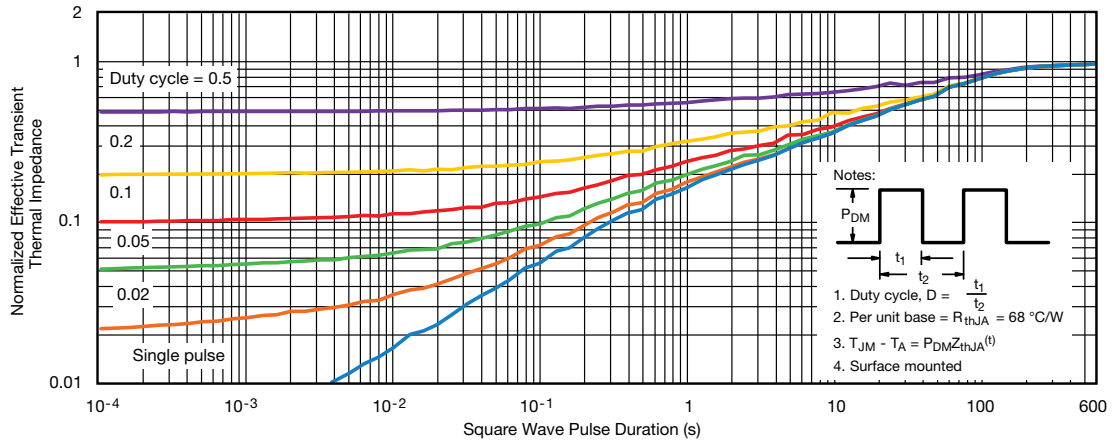
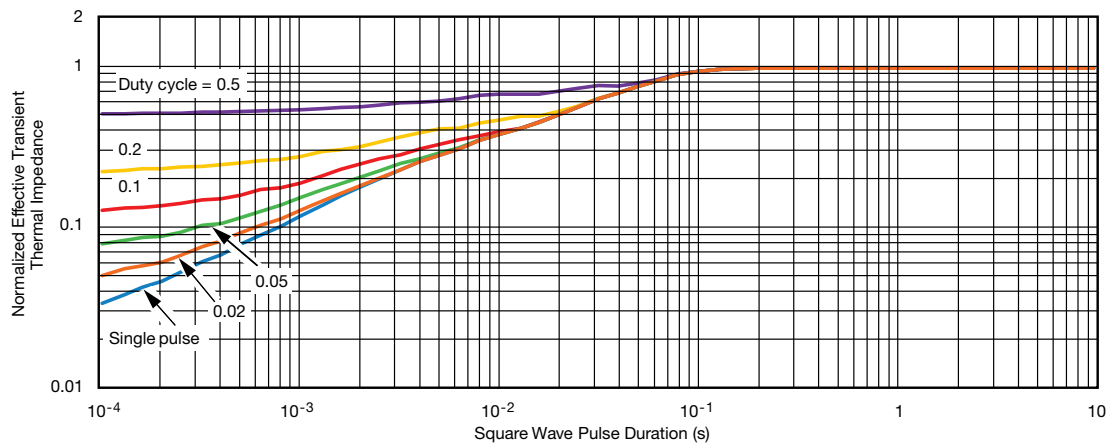
TYPICAL CHARACTERISTICS ($T_A = 25\text{ }^{\circ}\text{C}$, unless otherwise noted)



On-Resistance vs. Gate-to-Source Voltage



Threshold Voltage

**TYPICAL CHARACTERISTICS** ($T_A = 25\text{ }^{\circ}\text{C}$, unless otherwise noted)**Normalized Thermal Transient Impedance, Junction-to-Ambient****Normalized Thermal Transient Impedance, Junction-to-Case****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

Vishay Siliconix maintains worldwide manufacturing capability. Products may be manufactured at one of several qualified locations. Reliability data for Silicon Technology and Package Reliability represent a composite of all qualified locations. For related documents such as package / tape drawings, part marking, and reliability data, see www.vishay.com/ppg?77422.