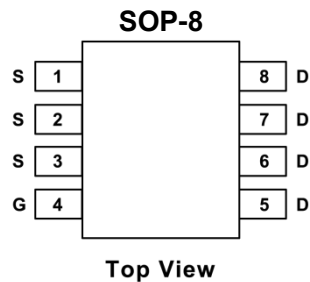
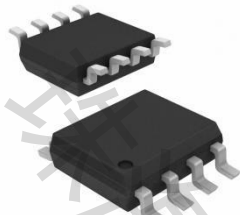


SI4435DY-T1-GE3-HX P-Channel 30-V (D-S) MOSFET

PRODUCT SUMMARY

V _{DS} (V)	R _{DS(on)} (Ω)	Q _g (Typ.)	I _D (A) ^d
-30	0.018 at V _{GS} = - 10 V	13nC	-9.0
	0.024 at V _{GS} = - 4.5 V		-7.8



FEATURES

- TrenchFET[®] Power MOSFET
- 100 % R_g Tested

APPLICATIONS

- Load Switch
- Battery Switch

Absolute Maximum Ratings

	Parameter	Max.	Units
V _{DS}	Drain- Source Voltage	-30	V
I _D @ T _A = 25°C	Continuous Drain Current, V _{GS} @ -10V	-8.0	A
I _D @ T _A = 70°C	Continuous Drain Current, V _{GS} @ -10V	-6.4	
I _{DM}	Pulsed Drain Current @	-50	
P _D @ T _A = 25°C	Power Dissipation	2.5	W
P _D @ T _A = 70°C	Power Dissipation	1.6	
	Linear Derating Factor	0.02	
V _{GS}	Gate-to-Source Voltage	± 20	V
T _J , T _{STG}	Junction and Storage Temperature Range	-55 to + 150	°C

Thermal Resistance

	Parameter	Max.	Units
R _{θJA}	Maximum Junction-to-Ambient [©]	50	°C/W

Electrical Characteristics @ T_J = 25°C (unless otherwise specified)

	Parameter	Min.	Typ.	Max.	Units	Conditions
V _{(BR)DSS}	Drain-to-Source Breakdown Voltage	-30	—	—	V	V _{GS} = 0V, I _D = -250μA
ΔV _{(BR)DSS} /ΔT _J	Breakdown Voltage Temp. Coefficient	—	-0.019	—	V/°C	Reference to 25°C, I _D = -1mA
R _{DS(on)}	Static Drain-to-Source On-Resistance	—	0.015	0.020		V _{GS} = -10V, I _D = -8.0A ©
		—	0.026	0.035		V _{GS} = -4.5V, I _D = -5.0A ©
V _{GS(th)}	Gate Threshold Voltage	-1.0	—	—	V	V _{DS} = V _{GS} , I _D = -250μA
g _{fs}	Forward Transconductance	—	11	—	S	V _{DS} = -15V, I _D = -8.0A
I _{DSS}	Drain-to-Source Leakage Current	—	—	-10	μA	V _{DS} = -24V, V _{GS} = 0V
		—	—	-10		V _{DS} = -15V, V _{GS} = 0V, T _J = 70°C
I _{GSS}	Gate-to-Source Forward Leakage	—	—	-100	nA	V _{GS} = -20V
	Gate-to-Source Reverse Leakage	—	—	100		V _{GS} = 20V
Q _g	Total Gate Charge	—	40	60	nC	I _D = -4.6A V _{DS} = -15V V _{GS} = -10V ©
Q _{gs}	Gate-to-Source Charge	—	7.1	—		
Q _{gd}	Gate-to-Drain ("Miller") Charge	—	8.0	—		
t _{d(on)}	Turn-On Delay Time	—	16	24	ns	V _{DD} = -15V, V _{GS} = -10V © I _D = -1.0A R _G = 6.0 R _D = 15
t _r	Rise Time	—	76	110		
t _{d(off)}	Turn-Off Delay Time	—	130	200		
t _f	Fall Time	—	90	140		
C _{iss}	Input Capacitance	—	2320	—	pF	V _{GS} = 0V V _{DS} = -15V f = 1.0kHz
C _{oss}	Output Capacitance	—	390	—		
C _{rss}	Reverse Transfer Capacitance	—	270	—		

Source-Drain Ratings and Characteristics

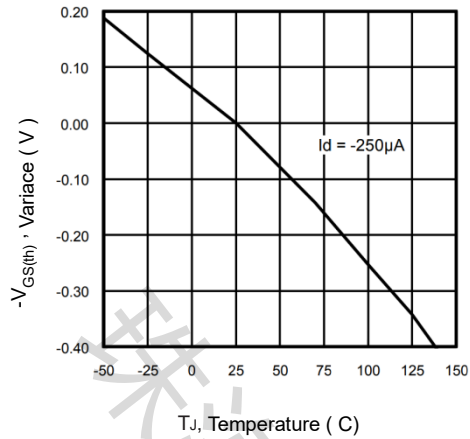
	Parameter	Min.	Typ.	Max.	Units	Conditions
I _S	Continuous Source Current (Body Diode)	—	—	-2.5	A	MOSFET symbol showing the integral reverse p-n junction diode.
I _{SM}	Pulsed Source Current (Body Diode) ©	—	—	-50		
V _{SD}	Diode Forward Voltage	—	—	-1.2	V	T _J = 25°C, I _S = -2.5A, V _{GS} = 0V ©
t _{rr}	Reverse Recovery Time	—	34	51	ns	T _J = 25°C, I _F = -2.5A di/dt = -100A/μs ©
Q _{rr}	Reverse Recovery Charge	—	33	50	nC	

Notes:

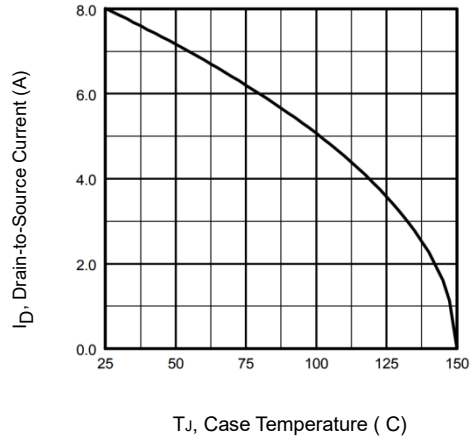
° Repetitive rating; pulse width limited by max. junction temperature.

° Pulse width ≤ 300μs; duty cycle ≤ 2%.

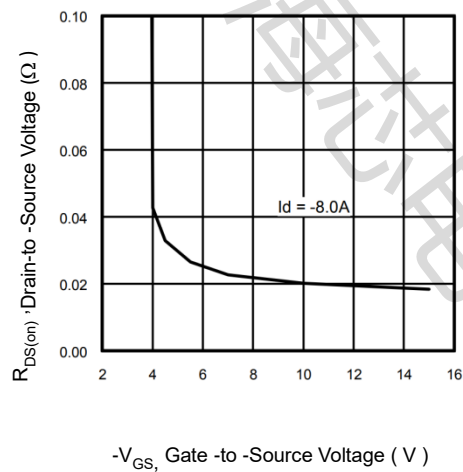
© Surface mounted on FR-4 board, t ≤ 5sec.



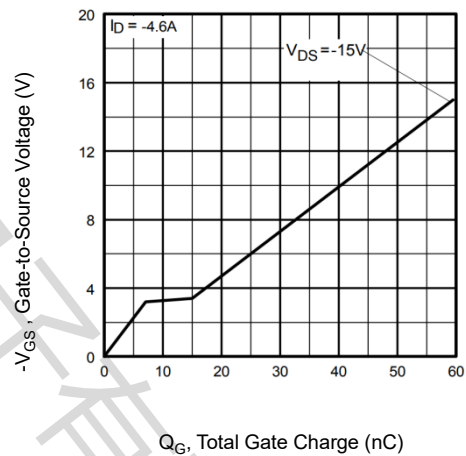
**Fig 1. Typical Vgs(th) Variance
Vs. Junction Temperature**



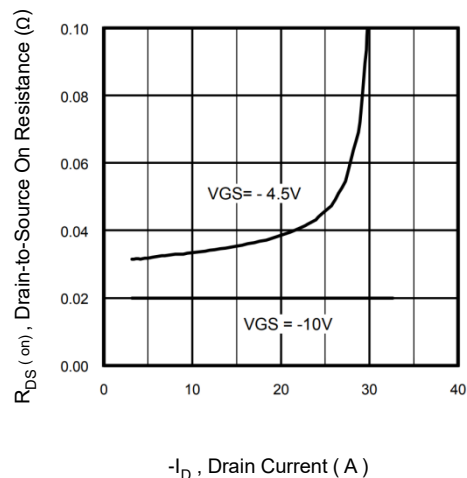
**Fig 2. Maximum Drain Current
Vs. Case Temperature**



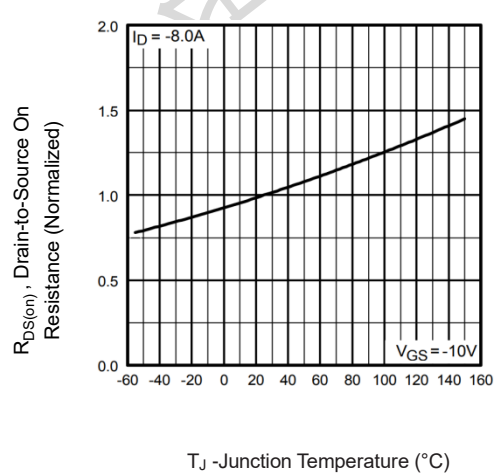
**Fig 3. Typical On-Resistance
Vs. Gate Voltage**



**Fig 4. Typical Gate Charge
Vs. Gate-to-Source Voltage**



**Fig 5. Typical On-Resistance
Vs. Drain Current**



**Fig 6. Normalized On-Resistance
Vs. Temperature**

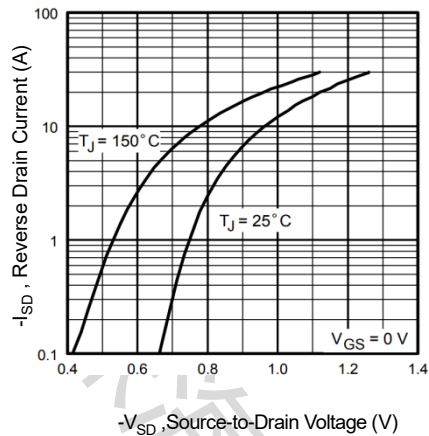


Fig 7. Typical Source-Drain Diode Forward Voltage

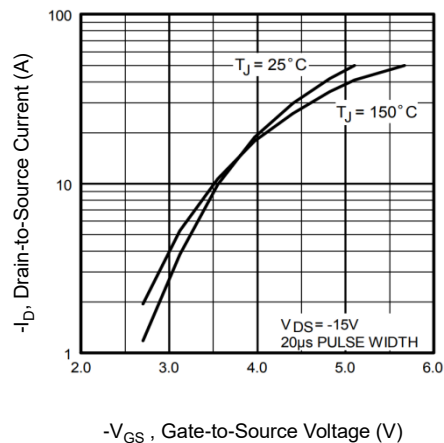


Fig 8. Typical Transfer Characteristics

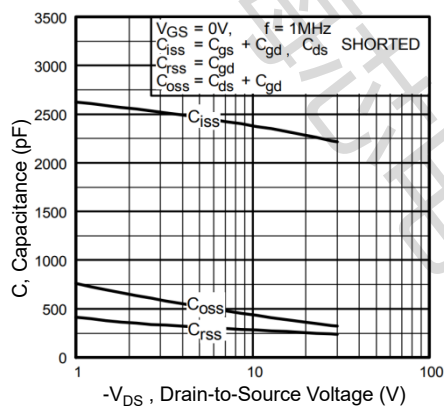


Fig 9. Typical Capacitance
Vs. Drain-to-Source Voltage

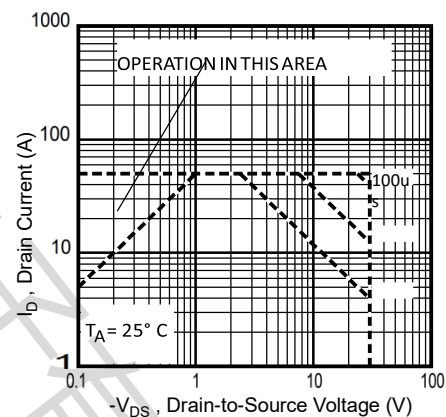


Fig 10. Maximum Safe Operating Area

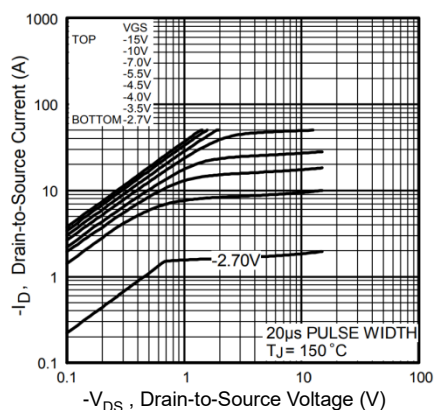


Fig 11. Typical Output Characteristics

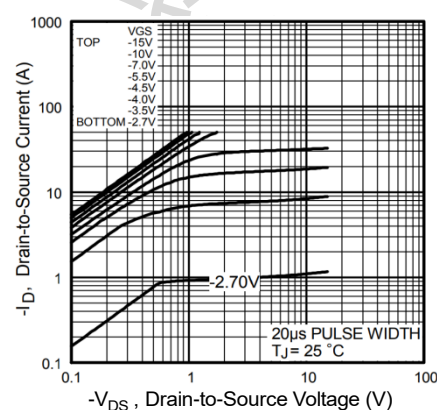


Fig 12. Typical Output Characteristics

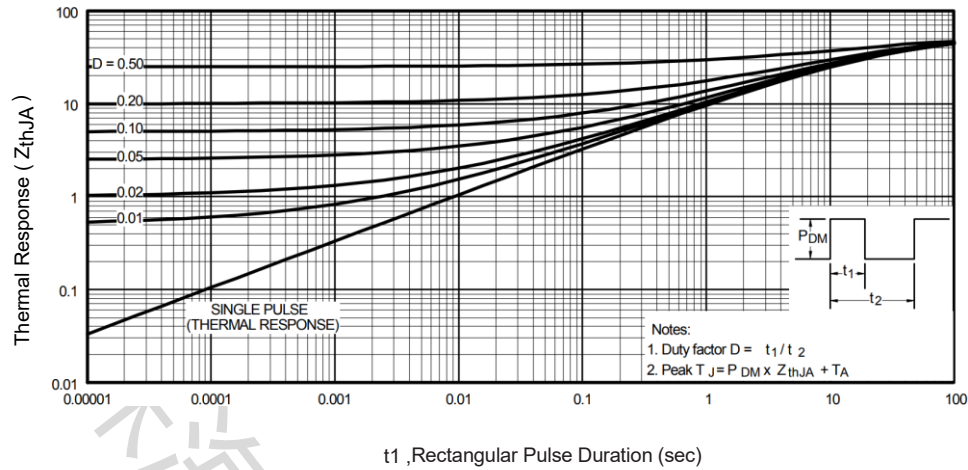
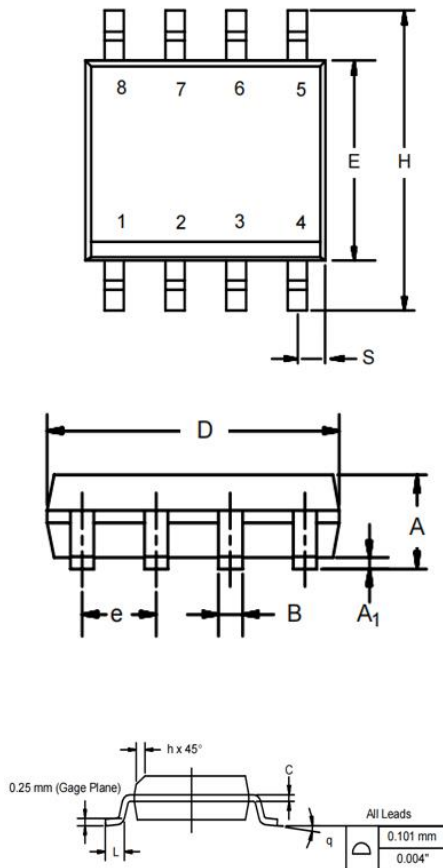


Fig 13. Maximum Effective Transient Thermal Impedance, Junction-to-Ambient

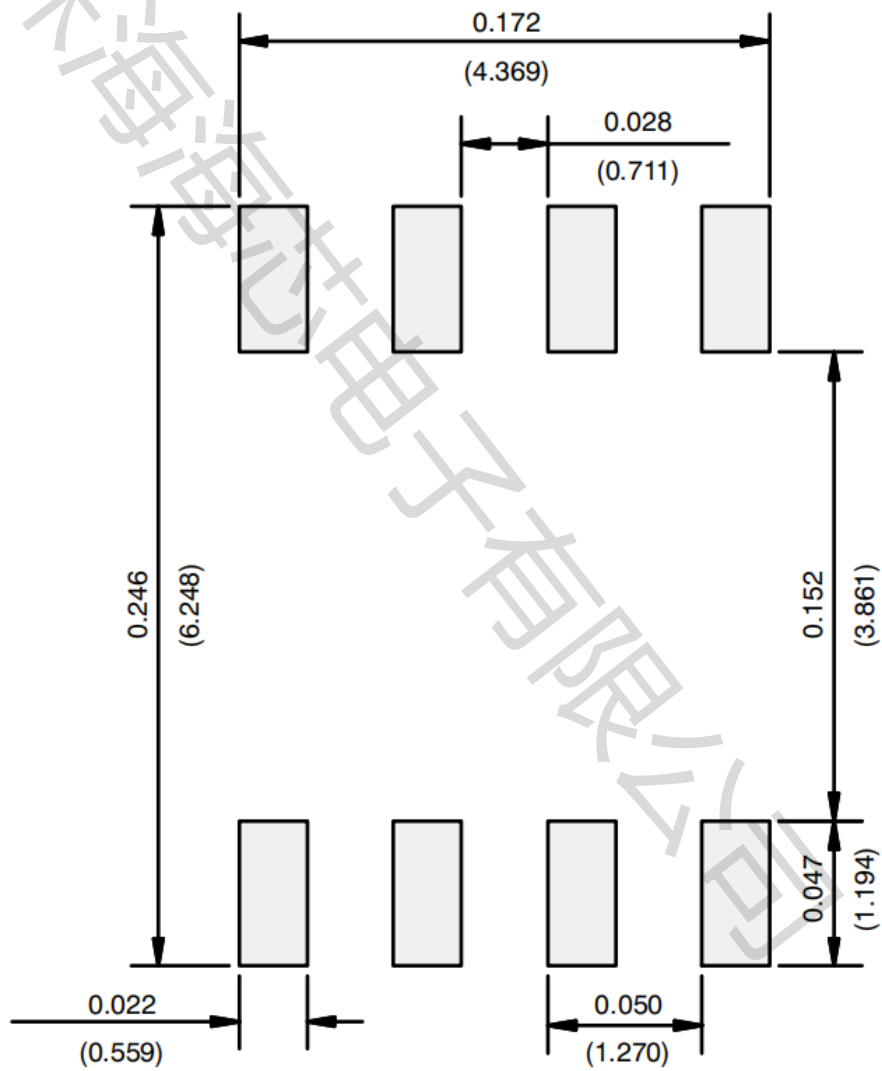
SOP-8 Package Outline

Dimensions are shown in millimeters (inches)



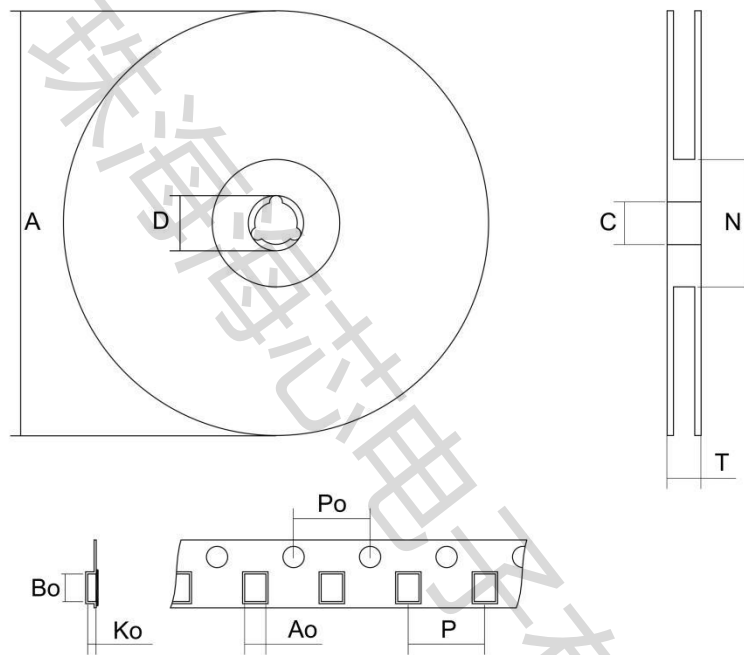
DIM	MILLIMETERS		INCHES	
	Min	Max	Min	Max
A	1.35	1.75	0.053	0.069
A1	0.10	0.20	0.004	0.008
B	0.35	0.51	0.014	0.020
C	0.19	0.25	0.0075	0.010
D	4.80	5.00	0.189	0.196
E	3.80	4.00	0.150	0.157
e	1.27 BSC		0.050 BSC	
H	5.80	6.20	0.228	0.244
h	0.25	0.50	0.010	0.020
L	0.50	0.93	0.020	0.037
q	0°	8°	0°	8°
S	0.44	0.64	0.018	0.026

RECOMMENDED MINIMUM PADS FOR SOP-8

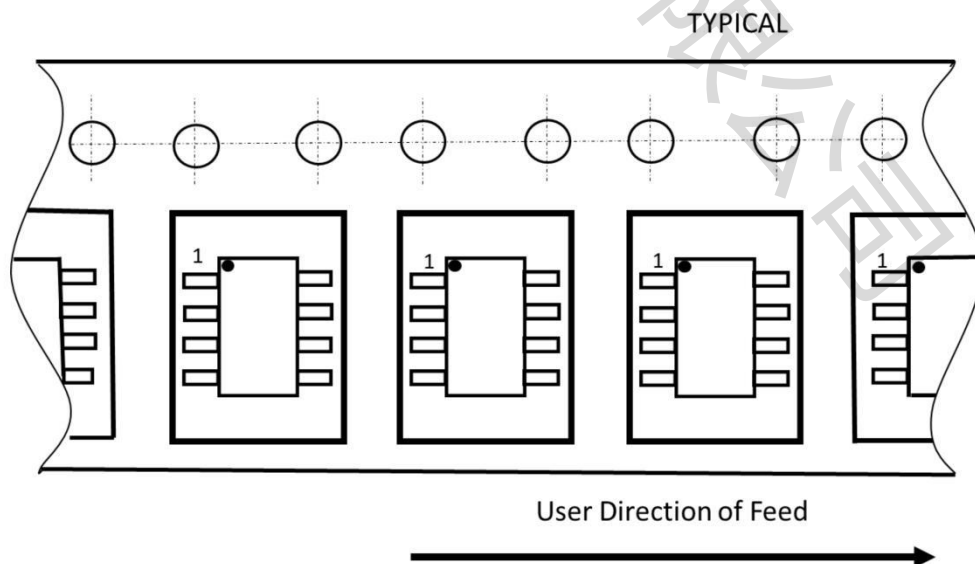


SOP-8 packing information

SOP-8 tape and reel



Tape orientation



Disclaimer

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