

P-Channel Plastic-Encapsulate MOSFET
PRIMARY CHARACTERISTICS

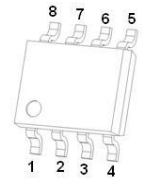
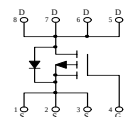
$V_{(BR)DSS}$	$R_{DS(ON)MAX}$	I_D
-30V	14mΩ@-10V	-12A
	17mΩ@-6V	

FEATURES

- Battery protection applications
- Load switch.
- Moisture Sensitivity Level 1

SOP-8 PACKAGE
Marking


Q4407= Device code
YY=Date Code


Equivalent Circuit

MECHANICAL DATA

- Case : Molded plastic,SOP-8
- Polarity : Shown above
- Terminals :Plated terminals, solderable per MIL-STD-750,Method 2026
- Epoxy : UL94-V0 rated flame retardant

DESCRIPTION

The SEQ4407 combines advanced trench MOSFET technology with a low resistance package to provide extremely low $R_{DS(ON)}$. This device is ideal for load switch and battery protection applications

MAXIMUM RATINGS ($T_a=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DS}	-30	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	I_D	-12	A
Pulsed Drain Current	I_{DM}	-48	A
Single Pulsed Avalanche Energy	$E_{AS}^{(1)}$	115	mJ
Power Dissipation	P_D	1.4	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	89	$^{\circ}\text{C/W}$
Junction Temperature	T_J	150	$^{\circ}\text{C}$
Storage Temperature Range	T_{stg}	-55 ~+150	$^{\circ}\text{C}$
Lead Temperature for Soldering Purposes(1/8" from case for 10s)	T_L	260	$^{\circ}\text{C}$

(1). E_{AS} condition: $V_{DD}=-50\text{V}$, $L=0.5\text{mH}$, $R_G=25\Omega$, Starting $T_J = 25^{\circ}\text{C}$



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 $T_a=25^{\circ}\text{C}$ unless otherwise specified

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Off characteristics						
Drain-source breakdown voltage	V _{(BR) DSS}	V _{GS} = 0V, I _D =-250μA	-30			V
Zero gate voltage drain current	I _{DSS}	V _{DS} =-30V, V _{GS} =0V			-1	μA
Gate-body leakage current	I _{GSS}	V _{DS} =0V, V _{GS} =±20V			±100	nA
On characteristics (note1)						
Gate-threshold voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =-250μA	-1.0	-1.5	-2.2	V
Static drain-source on-sate resistance	R _{DS(on)}	V _{GS} =-10V, I _D =-12A		7.8	13	mΩ
		V _{GS} =-6V, I _D =-10A		9	17	mΩ
Forward transconductance	g _{FS}	V _{DS} =-5V, I _D =-15A	25			S
Dynamic characteristics (note 2)						
Input capacitance	C _{iss}	V _{DS} =-15V,V _{GS} =0V, f =1MHz		2900		pF
Output capacitance	C _{oss}			410		
Reverse transfer capacitance	C _{rss}			280		
Switching characteristics (note 2)						
Total gate charge	Q _g	V _{DS} =-15V, V _{GS} =-10V, I _D =-10A		48		nC
Gate-source charge	Q _{gs}			12		
Gate-drain charge	Q _{gd}			14		
Turn-on delay time	t _{d(on)}	V _{DD} =-15V, V _{GS} =-10V,R _G =3Ω, R _L =1.25Ω		15		ns
Turn-on rise time	t _r			11		
Turn-off delay time	t _{d(off)}			44		
Turn-off fall time	t _f			21		
Gate Resistance	R _g	f =1MHz, V _{DS} =0V, V _{GS} =0V,			3.6	Ω
Drain-Source Diode Characteristics						
Drain-source diode forward voltage(note1)	V _{SD}	V _{GS} =0V, I _S =-2A			-1.2	V
Continuous drain-source diode forward current	I _S				-15	A
Pulsed drain-source diode forward current	I _{SM}				-60	A

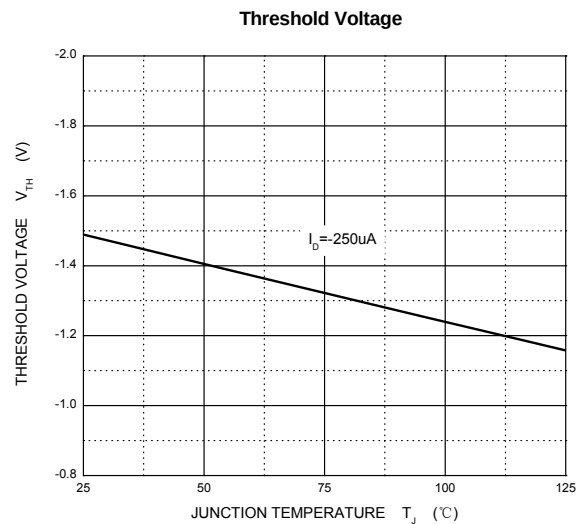
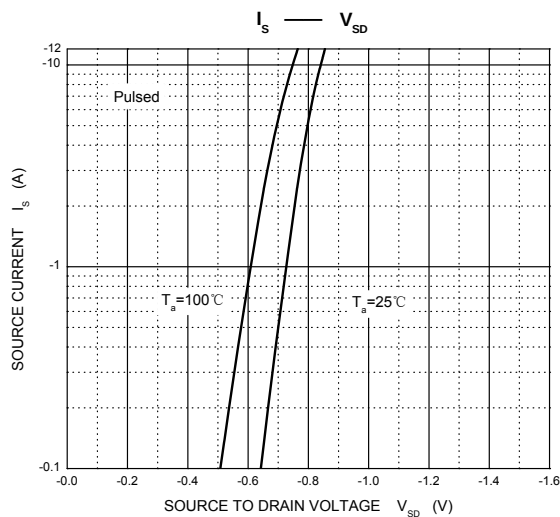
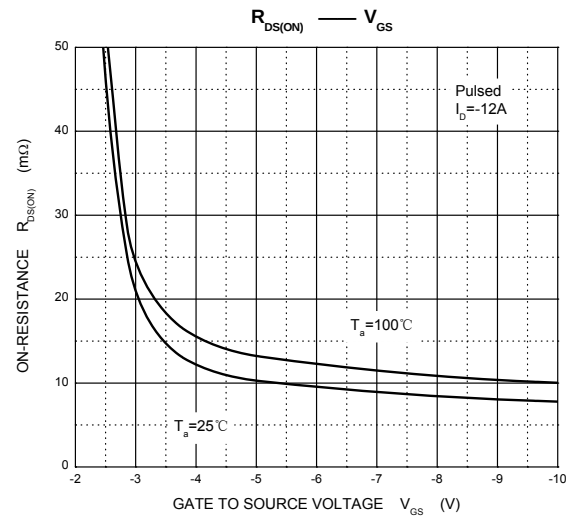
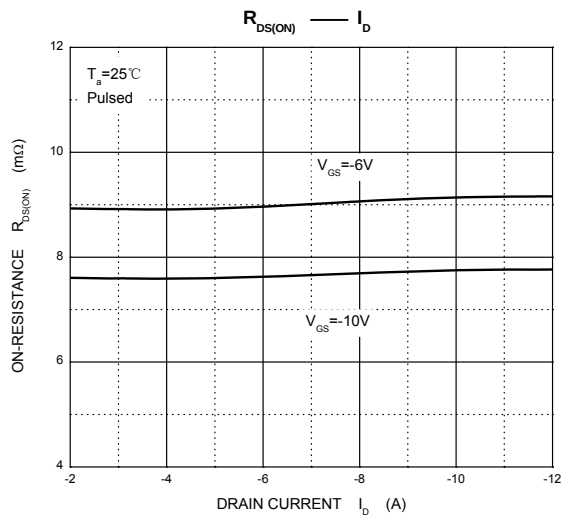
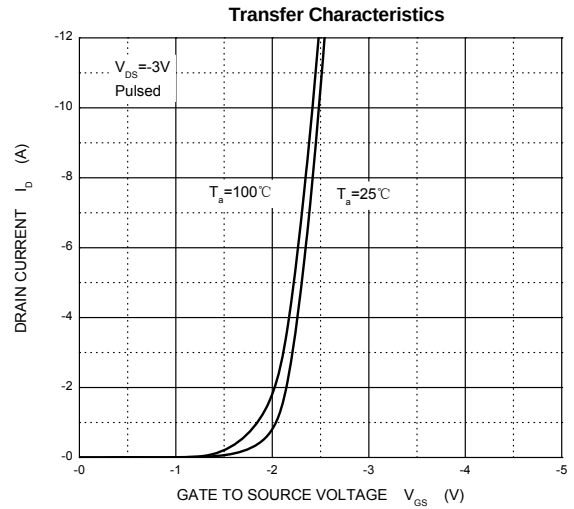
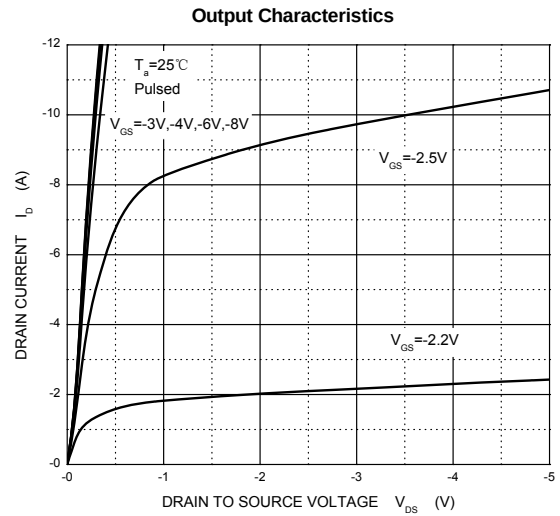
Notes:

1. Pulse Test : Pulse Width $\leq 300\mu s$, duty cycle $\leq 2\%$.
2. Guaranteed by design, not subject to production testing.



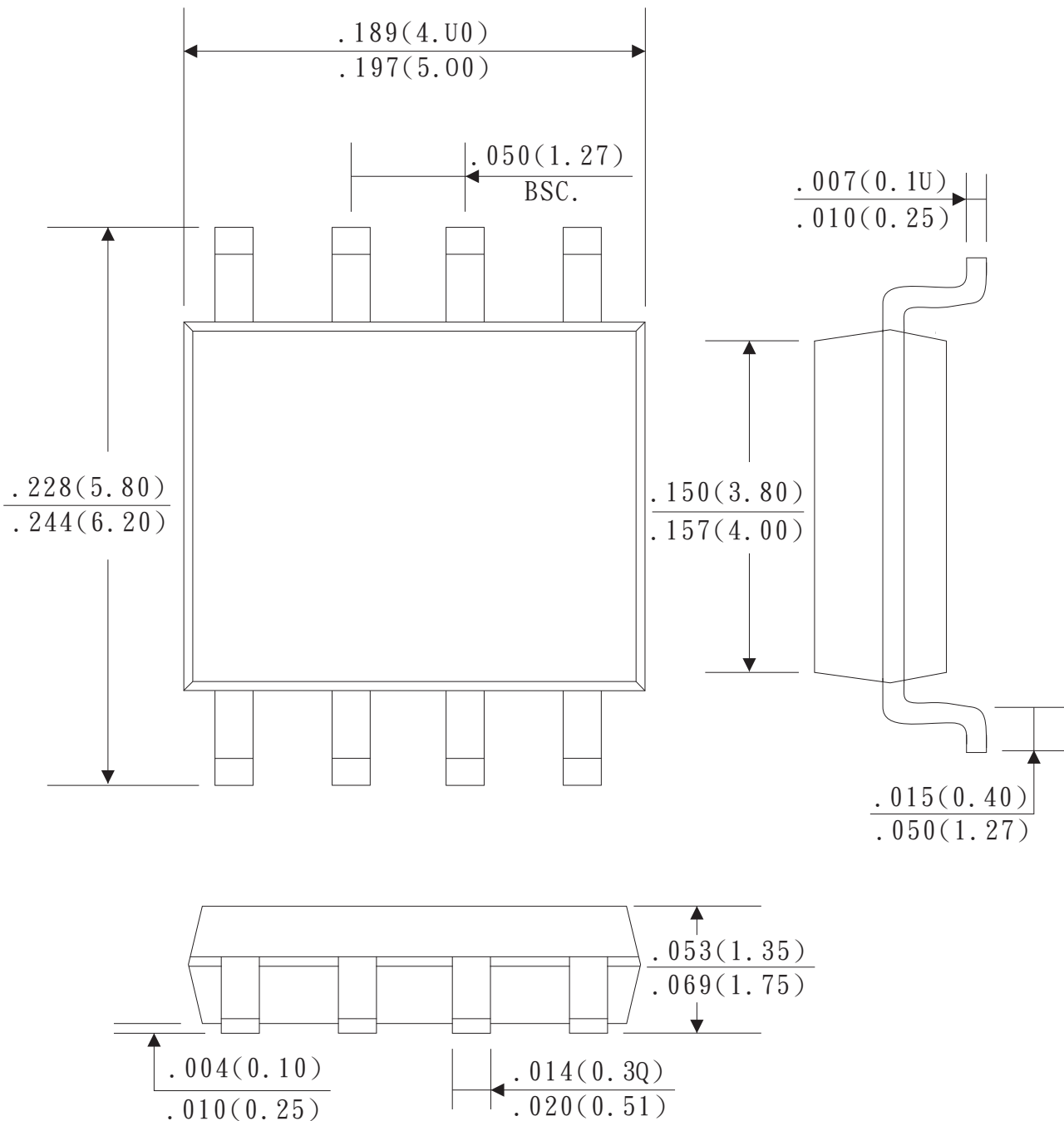
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Typical Characteristics



Outline Drawing

SOP-8



Dimensions in inches and (millimeters)

Rev.C

Ordering Information:

Device PN	Packing
SEQ4407-T ⁽¹⁾ G ⁽²⁾ -WS	Tape&Reel: 2.5 Kpcs/Reel

Note: (1) Packing code, Tape & Reel Packing

(2) RoHS product for packing code suffix "G" ; Halogen free product for packing code suffix "H"

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