

Features ➤ Super Low Gate Charge ➤ Green Device Available ➤ Excellent Cdv/dt effect decline ➤ Advanced high cell density Trench technology	Bvdss	Rdson	ID
	-30V	42mΩ	-4.5A
	Application ➤ Battery protection ➤ Load Switch ➤ Uninterruptible power supply		

Package

Marking and pin assignment

SOT23 top view

Schematic diagram

Package Marking and Ordering Information

Device Marking	Device	Device Package	Quantity
A79T	3407	SOT23	3000

Absolute Maximum Ratings (T_A=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V _{DS}	-30	V
Gate-Source Voltage	V _{GS}	±20	V
Continuous Drain Current	I _D @T _A =25°C	-4.5	A
	I _D @T _A =70°C	-3.6	A
Pulsed Drain Current ²	I _{DM}	-16	A
Single Pulsed Avalanche Energy	EAS	-	mJ
Total Power Dissipation ³	P _D @T _A =25°C	1.4	W
Storage Temperature Range	T _{STG}	-55 ~ 150	°C
Operating Junction Temperature Range	T _J	-55 ~ 150	°C

Thermal Resistance Ratings

Parameter	Symbol	Value	Unit
Thermal Resistance Junction-Ambient ²	R _{θJA}	105	°C/W
Thermal Resistance Junction-Case	R _{θJC}	-	°C/W



Ordering Information

Ordering Number	Package	Pin Assignment			Packing
Halogen Free		G	S	D	
HL3407	SOT23	1	2	3	Tape Reel

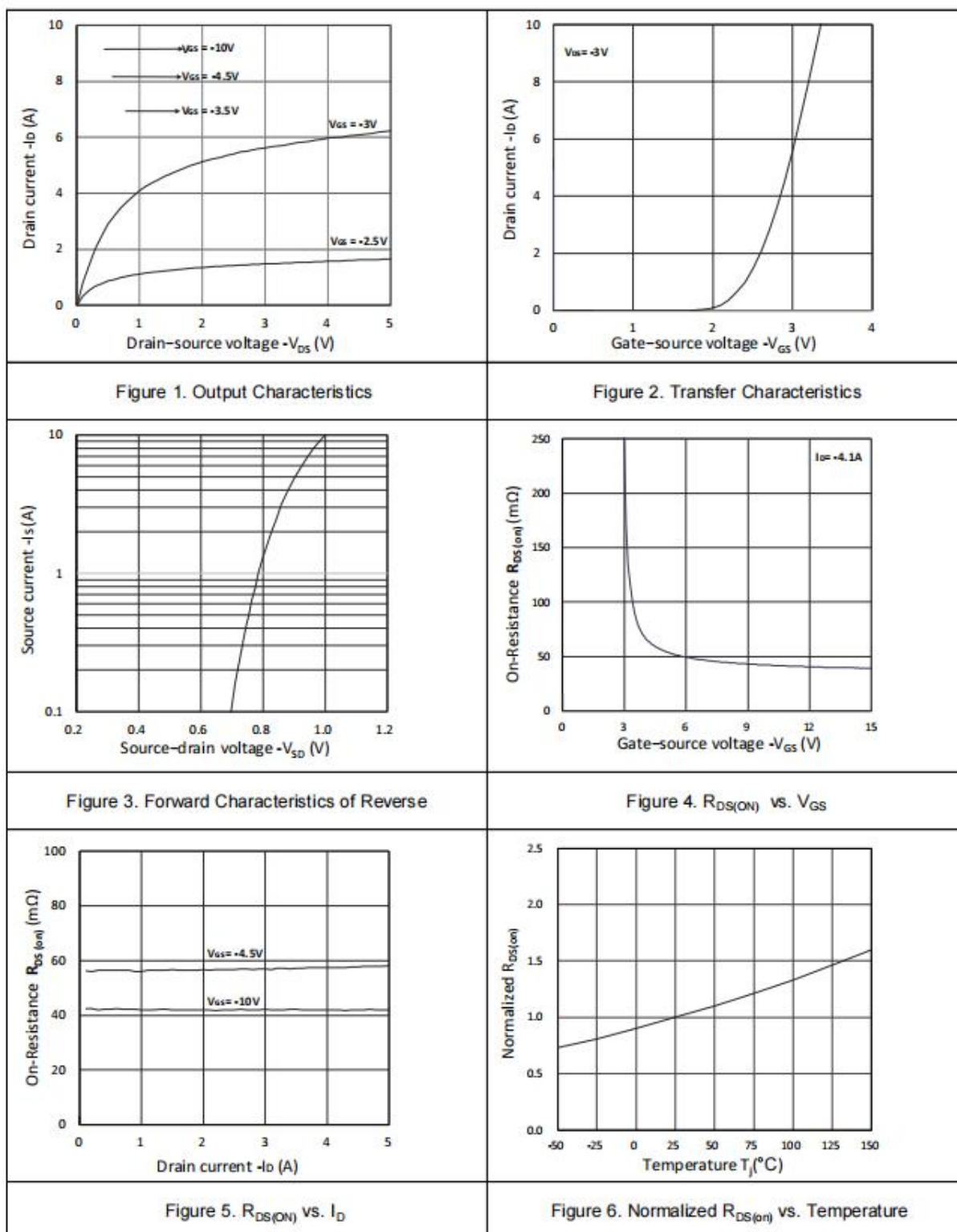
Electrical Characteristics ($T_J=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=-250\mu A$	-30	-	-	V
Drain-Source Leakage Current	I_{DSS}	$V_{DS}=-30V, V_{GS}=0V$	-	-	-1	μA
Gate-Source Leakage Current	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 20V$	-	-	± 100	nA
Gate-Source Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-1	-1.5	-2.5	V
Static Drain-Source On-Resistance ³	$R_{DS(on)}$	$V_{GS}=-10V, I_D=-4.1A$	-	42	60	m Ω
		$V_{GS}=-4.5V, I_D=-3A$	-	54	85	
Input Capacitance	C_{iss}	$V_{DS}=-15V, V_{GS}=0V,$ $f=1\text{MHz}$	-	553	-	pF
Output Capacitance	C_{oss}		-	70	-	
Reverse Transfer Capacitance	C_{rss}		-	56	-	
Total Gate Charge	Q_g	$V_{DS}=-15V, V_{GS}=-10V, I_D=-4.1A$	-	6.8	-	nC
Gate-Source Charge	Q_{gs}		-	1	-	
Gate-Drain("Miller")Charge	Q_{gd}		-	1.4	-	
Turn-on Delay Time	$t_{d(on)}$	$V_{GS}=-10V, V_{DD}=-15V,$ $R_G=2.5\Omega, R_L=15\Omega$	-	14	-	ns
Rise Time	t_r		-	61	-	
Turn-off Delay Time	$t_{d(off)}$		-	19	-	
Fall Time	t_f		-	10	-	
Continuous Source Current	I_S	-	-	-	-4.1	A
Drain to Source Diode Forward Current	I_{SM}	-	-	-	-	A
Drain to Source Diode Forward Voltage ³	V_{SD}	$V_{GS}=0V, I_S=-4.1A$	-	-	-1.2	V
Body Diode Reverse Recovery Time	t_{rr}	-	-	-	-	nS
Body Diode Reverse Recovery Charge	Q_{rr}		-	-	-	nC

Notes:

1. Repetitive rating, pulse width limited by junction temperature $T_{J(MAX)}=150^{\circ}\text{C}$.
2. The data tested by surface mounted on a 1 inch² FR-4 board with 2OZ copper, The value in any given application depends on the user's specific board design.
3. Pulse Test: Pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.
4. This value is guaranteed by design hence it is not included in the production test.

Typical Performance Characteristics



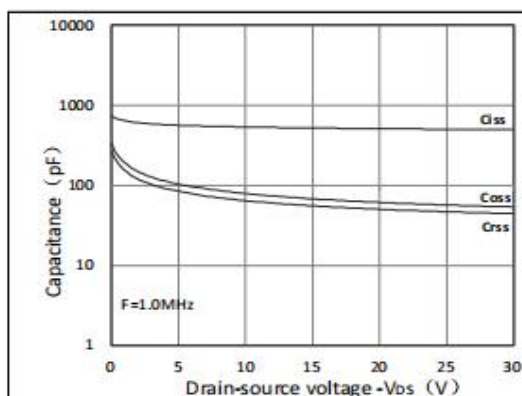


Figure 7. Capacitance Characteristics

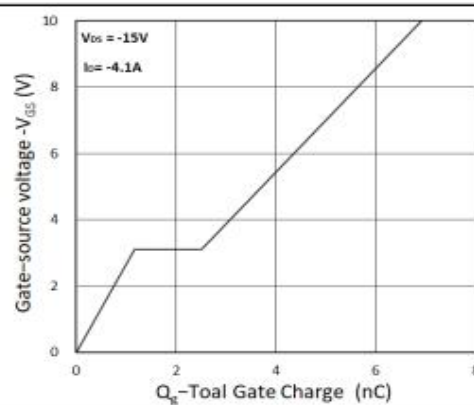
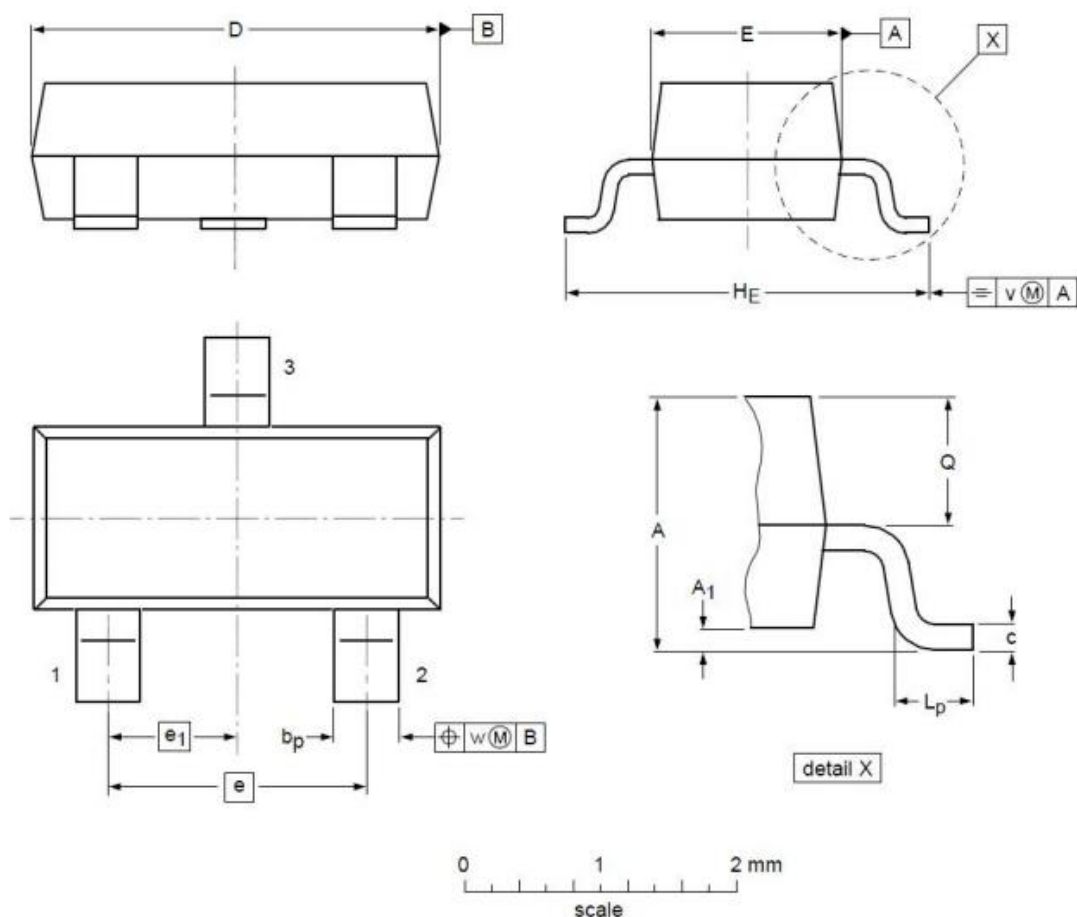


Figure 8. Gate Charge Characteristics

Package Dimensions SOT23



DIMENSIONS (unit : mm)

Symbol	Min	Typ	Max	Symbol	Min	Typ	Max
A	0.90	1.01	1.15	A ₁	0.01	0.05	0.10
b _p	0.30	0.42	0.50	c	0.08	0.13	0.15
D	2.80	2.92	3.00	E	1.20	1.33	1.40
e	--	1.90	--	e ₁	--	0.95	--
H _E	2.25	2.40	2.55	L _p	0.30	0.42	0.50
Q	0.45	0.49	0.55	v	--	0.20	--
w	--	0.10	--				



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