

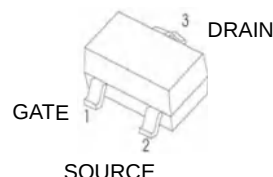
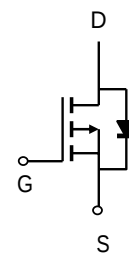


MT3407 Plastic-Encapsulate MOSFETS

General Description

The MT3407 uses advanced trench technology to provide excellent $R_{DS(on)}$ with low gate charge. This device is suitable for use as a load switch or in PWM applications.

MARKING: 3407



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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	-30	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	I_D	-4.1	A
Power Dissipation	P_D	350	mW
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	357	$^{\circ}\text{C}/\text{W}$
Junction Temperature	T_J	150	$^{\circ}\text{C}$
Storage Temperature	T_{stg}	-55~+150	$^{\circ}\text{C}$

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

Parameter	Symbol	Test Condition	Min	Typ	Max	Units
Static characteristics						
Drain-source breakdown voltage	BV _{DSS}	V _{GS} = 0V, I _D =-250μA	-30			V
Zero gate voltage drain current	I _{DSS}	V _{DS} =-24V, V _{GS} = 0V			-1	μA
Gate-source leakage current	I _{GSS}	V _{GS} =±20V, V _{DS} = 0V			±100	nA
Drain-source on-resistance (note 1)	R _{DS(on)}	V _{GS} =-10V, I _D =-4.1A			60	mΩ
		V _{GS} =-4.5V, I _D =-3A			87	mΩ
Forward tranconductance (note 1)	g _{FS}	V _{DS} =-5V, I _D =-4A	5.5			S
Gate threshold voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =-250μA	-1		-3	V
Diode forward voltage (note 1)	V _{SD}	I _S =-1A,V _{GS} =0V			-1	V
Dynamic characteristics (note 2)						
Input capacitance	C _{iss}	V _{DS} =-15V,V _{GS} =0V,f =1MHz		700		pF
Output capacitance	C _{oss}			120		pF
Reverse transfer capacitance	C _{rss}			75		pF
Switching Characteristics (note 2)						
Turn-on delay time	t _{d(on)}	V _{GS} =-10V,V _{DS} =-15V, R _L =3.6Ω,R _{GEN} =3Ω		8.6		ns
Turn-on rise time	t _r			5.0		ns
Turn-off delay time	t _{d(off)}			28.2		ns
Turn-off fall time	t _f			13.5		ns

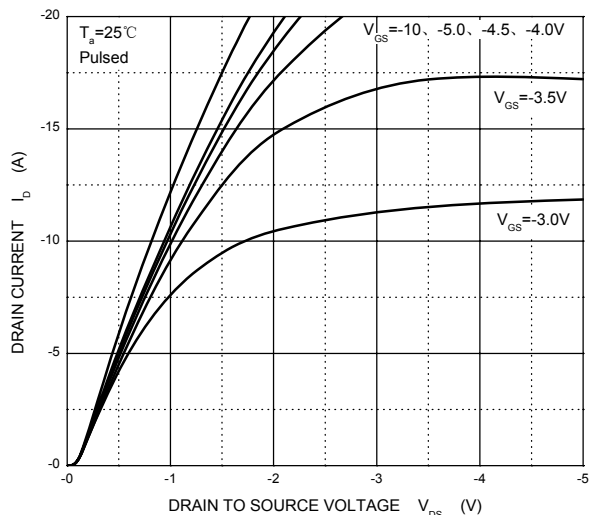
Notes:

1. Pulse test: Pulse width $\leq 300\mu\text{s}$, duty cycle $\leq 2\%$.
2. These parameters have no way to verify.

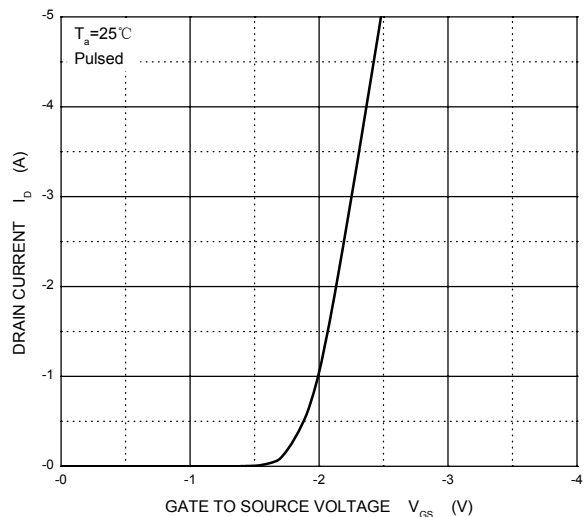


Typical Characteristics

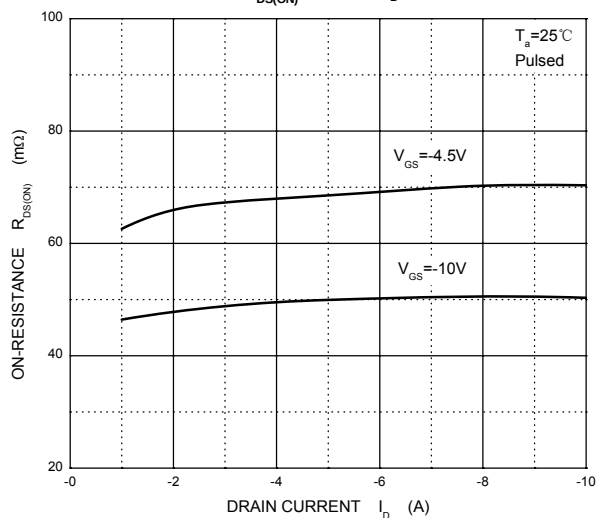
Output Characteristics



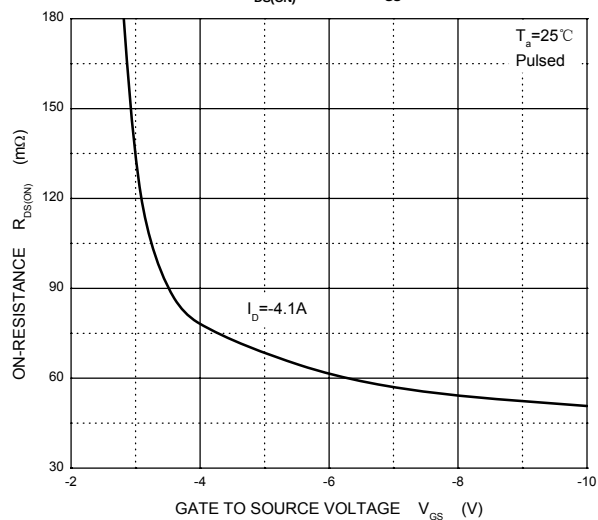
Transfer Characteristics



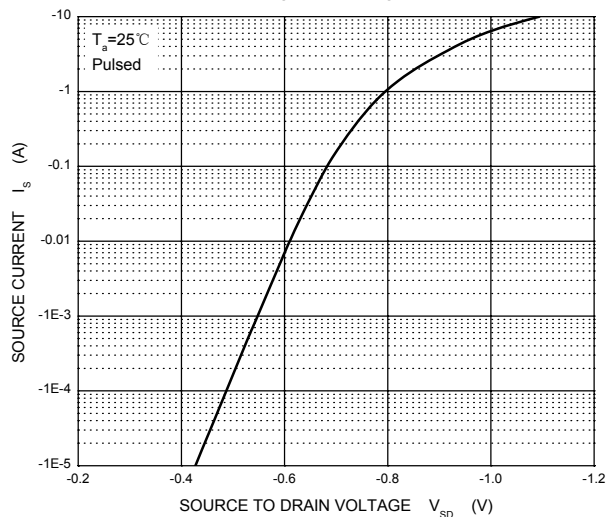
$R_{DS(ON)}$ — I_D



$R_{DS(ON)}$ — V_{GS}



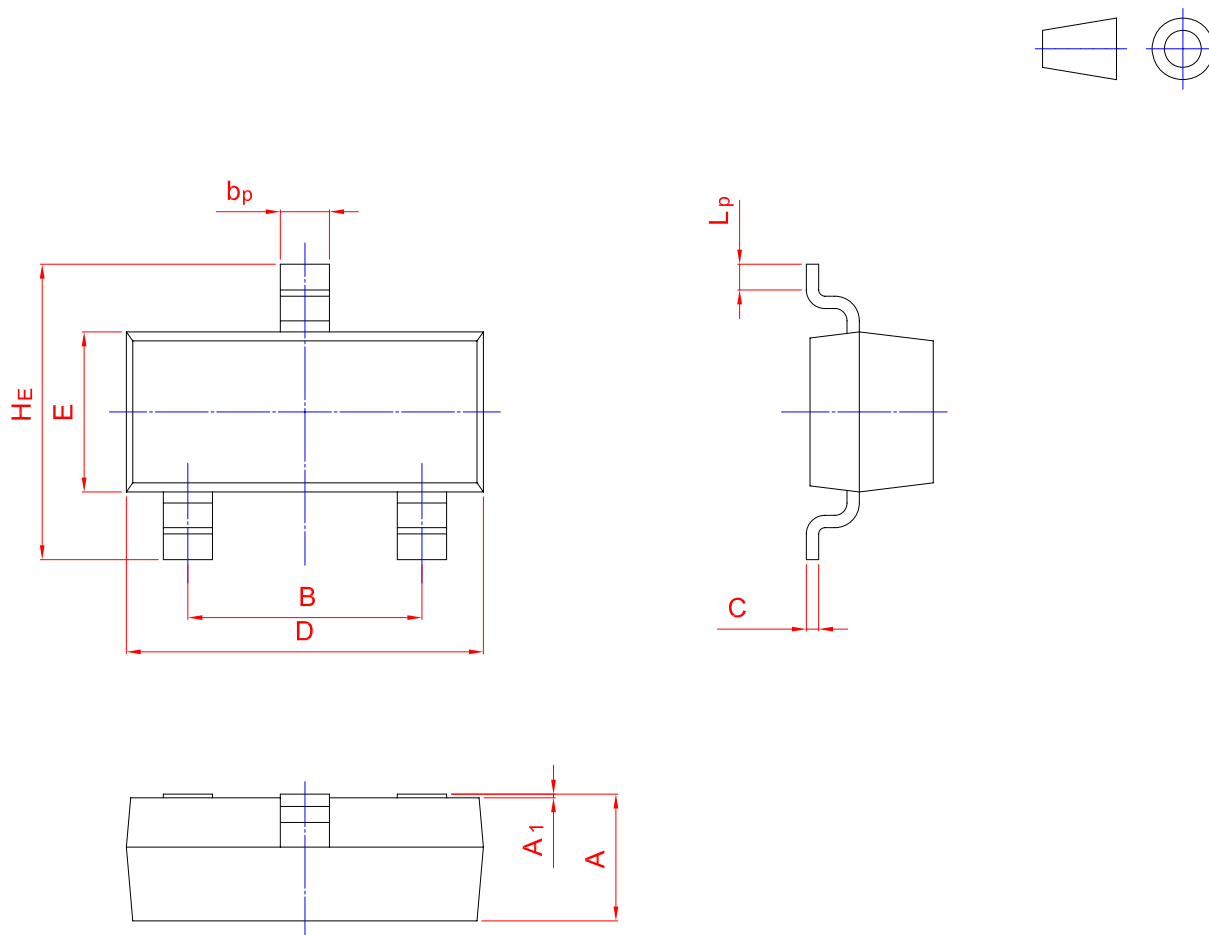
I_S — V_{SD}





PACKAGE OUTLINE

Plastic surface mounted package; 3 leads



UNIT	A	B	bp	C	D	E	HE	A1	Lp
mm	1.40 0.95	2.04 1.78	0.50 0.35	0.19 0.08	3.10 2.70	1.65 1.20	3.00 2.20	0.100 0.013	0.50 0.20