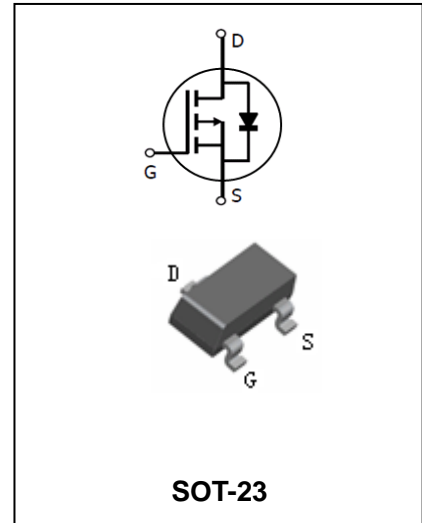


## P-Channel Enhancement Mode Field Effect Transistor **BL3407**

### FEATURES

- Electrostatic Sensitive Devices.
- $V_{DS} (V) = -30V$
- $I_D = -4.1$
- $R_{DS(ON)} < 52m\Omega (V_{GS} = -10V)$   
 $R_{DS(ON)} < 87m\Omega (V_{GS} = -4.5V)$



### APPLICATIONS

- P-channel enhancement mode effect transistor.
- Switching application.

### ORDERING INFORMATION

Type No.	Marking	Package Code
BL3407	3407	SOT-23

### MAXIMUM RATING @ Ta=25°C unless otherwise specified

Symbol	Parameter	Value	Units
$V_{DSS}$	Drain-Source voltage	-30	V
$V_{GSS}$	Gate -Source voltage	$\pm 20$	V
$I_D$	Continuous Drain Current <sup>A</sup>	@ TA = 25 °C -4.1 @ TA = 70 °C -3.5	A
$I_{DM}$	Pulsed Drain Current <sup>a</sup>	-20	A
$P_D$	Power Dissipation	@ TA = 25 °C 1.4 @ TA = 70 °C 1	W
$R_{\theta JA}$	Thermal resistance, Junction-to-Ambient	90	°C/W
$T_J, T_{stg}$	Junction and Storage Temperature	-55 to +150	°C

## P-Channel Enhancement Mode Field Effect Transistor BL3407

### ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
<b>STATIC PARAMETERS</b>						
Drain-Source Breakdown Voltage	$BV_{DSS}$	$V_{GS}=0V, I_D = -250\mu A$	-30	-	-	V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=-24V, V_{GS}=0V$	-	-	-1	$\mu A$
Gate-body Leakage	$I_{GSS}$	$V_{DS}=0V, V_{GS}=\pm 20V$	-	-	$\pm 100$	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D = -250\mu A$	-1	-1.8	-3	V
On state drain current	$I_{DON}$	$V_{GS} = -4.5V, V_{DS} = -5V$	-10	-	-	A
Static drain-Source on-resistance	$R_{DS(on)}$	$V_{GS} = -10V, I_D = -4.1A$ $V_{GS} = -4.5V, I_D = -3A$	-	43 64	52 87	m $\Omega$
Forward Transconductance	$g_{FS}$	$V_{DS} = -5V, I_D = -4A$	5.5	8.2	-	S
Drain-Source diode forward voltage	$V_{SD}$	$I_S = -1A, V_{GS}=0V$	-	-0.77	-1.0	V
Maximum Body-Diode Continuous Current	$I_S$		-	-	-2.2	A
<b>DYNAMIC CHARACTERISTICS<sup>C</sup></b>						
Input capacitance	$C_{ISS}$	$V_{GS}=0V, V_{DS} = -15V,$ $f=1MHz$	-	700		pF
Output capacitance	$C_{OSS}$		-	120	-	
Reverse transfer capacitance	$C_{RSS}$		-	75	-	
Gate resistance	$R_g$	$V_{GS}=0V, V_{DS}=0V,$ $f=1MHz$	-	10	-	$\Omega$
<b>SWITCHING CHARACTERISTICS<sup>C</sup></b>						
Turn-On Delay Time	$t_{D(ON)}$	$V_{GS} = -10V,$ $V_{DS} = -15V,$ $R_L=3.6\Omega,$ $R_{GEN}=3\Omega$	-	8.6	-	ns
Rise Time	$t_r$		-	5	-	ns
Turn-Off Delay Time	$t_{D(OFF)}$		-	28.2	-	ns
Fall Time	$t_f$		-	13.5	-	ns
Total Gate Charge	$Q_g (10V)$	$V_{GS} = -4.5V,$ $V_{DS} = -15V,$ $I_D = -4A$	-	14.3		nC
Total Gate Charge	$Q_g(4.5V)$			7		
Gate-Source Charge	$Q_{gs}$		-	3.1	-	nC
Gate-Drain Charge	$Q_{gd}$		-	3	-	nC
Body Diode Reverse Recovery Time	$t_{rr}$	$I_F = -4A,$ $dI/dt=100A/\mu s$	-	27		nS
Body Diode Reverse Recovery Charge	$Q_{rr}$	$I_F = -4A,$ $dI/dt=100A/\mu s$	-	15	-	nC

P-Channel Enhancement Mode Field Effect Transistor **BL3407**

TYPICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

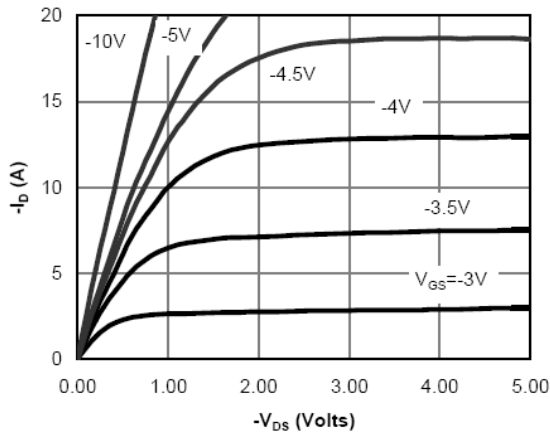


Figure 1: On-Region Characteristics

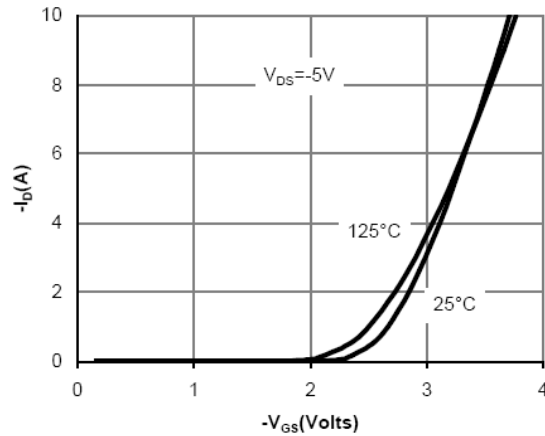


Figure 2: Transfer Characteristics

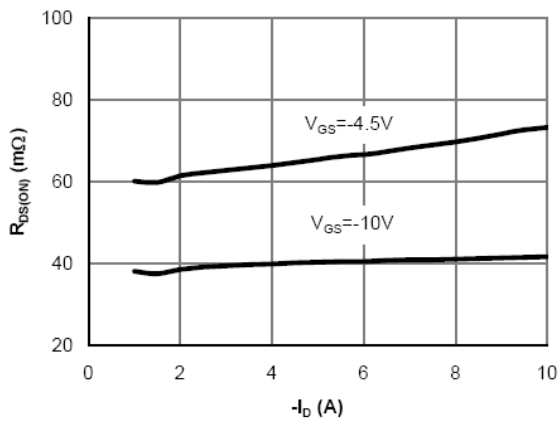


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

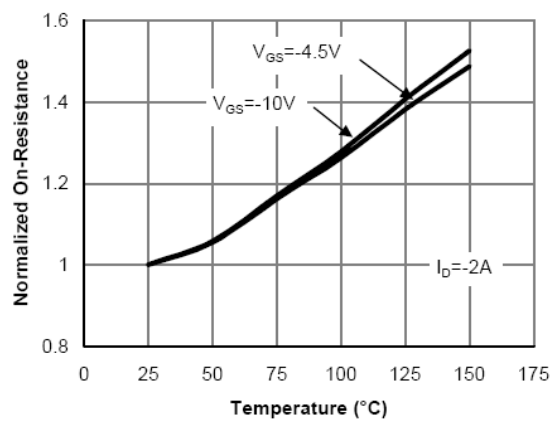


Figure 4: On-Resistance vs. Junction Temperature

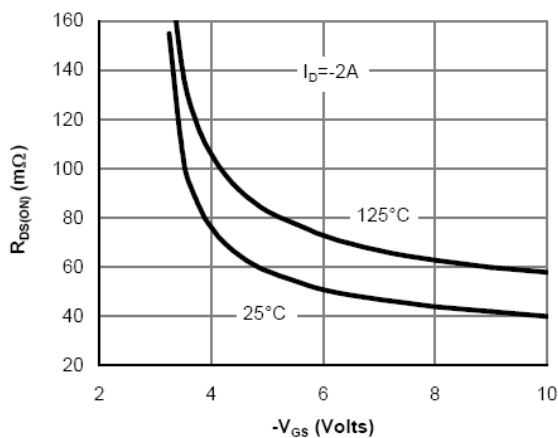


Figure 5: On-Resistance vs. Gate-Source Voltage

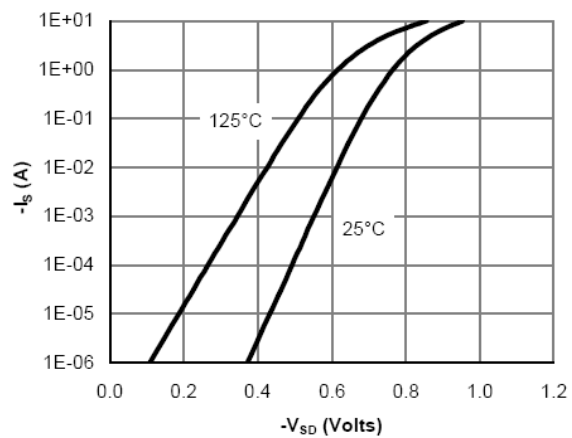


Figure 6: Body-Diode Characteristics

**P-Channel Enhancement Mode Field Effect Transistor BL3407**

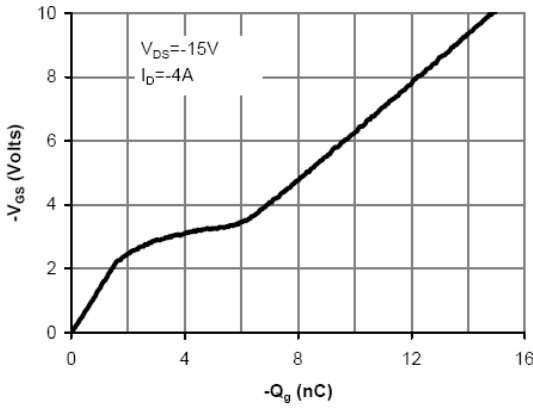


Figure 7: Gate-Charge Characteristics

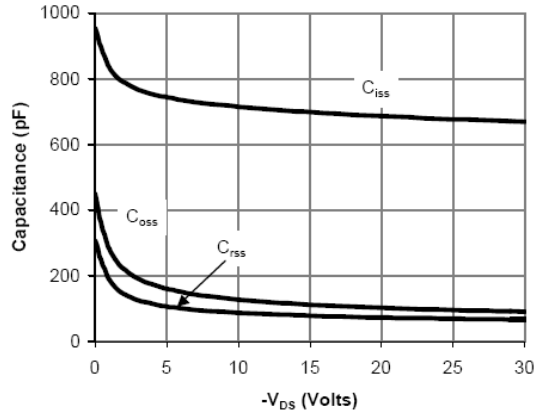


Figure 8: Capacitance Characteristics

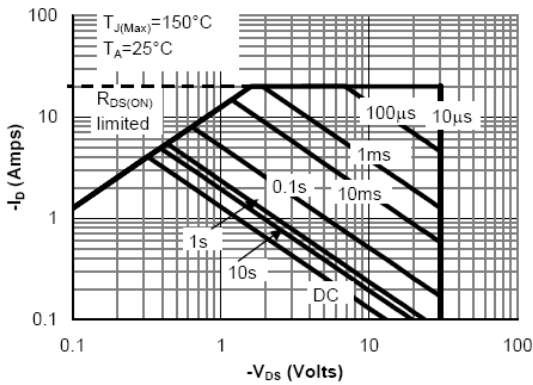


Figure 9: Maximum Forward Biased Safe Operating Area (Note E)

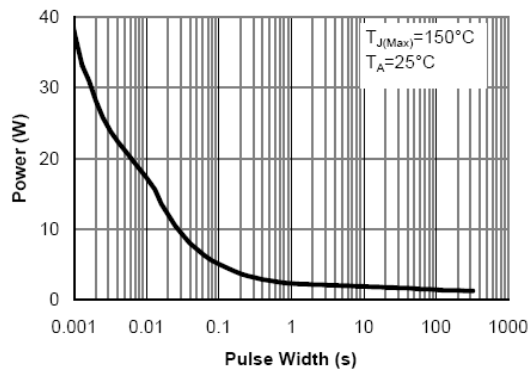


Figure 10: Single Pulse Power Rating Junction-to-Ambient (Note E)

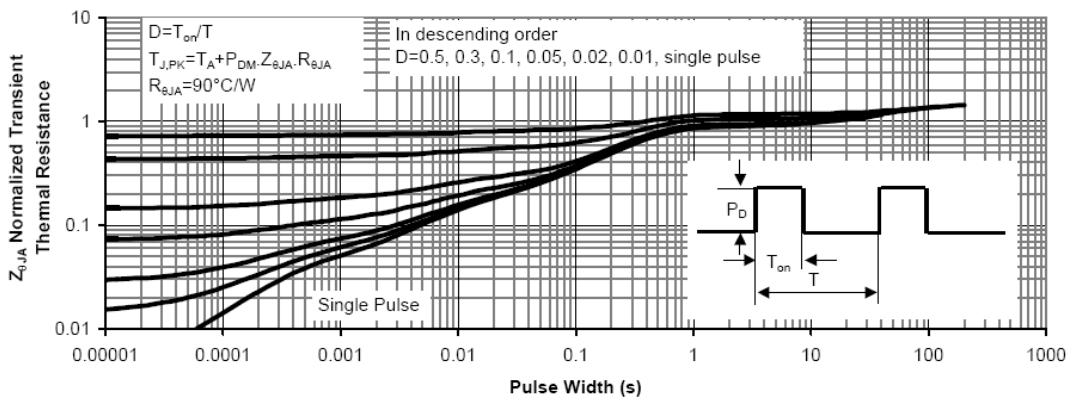


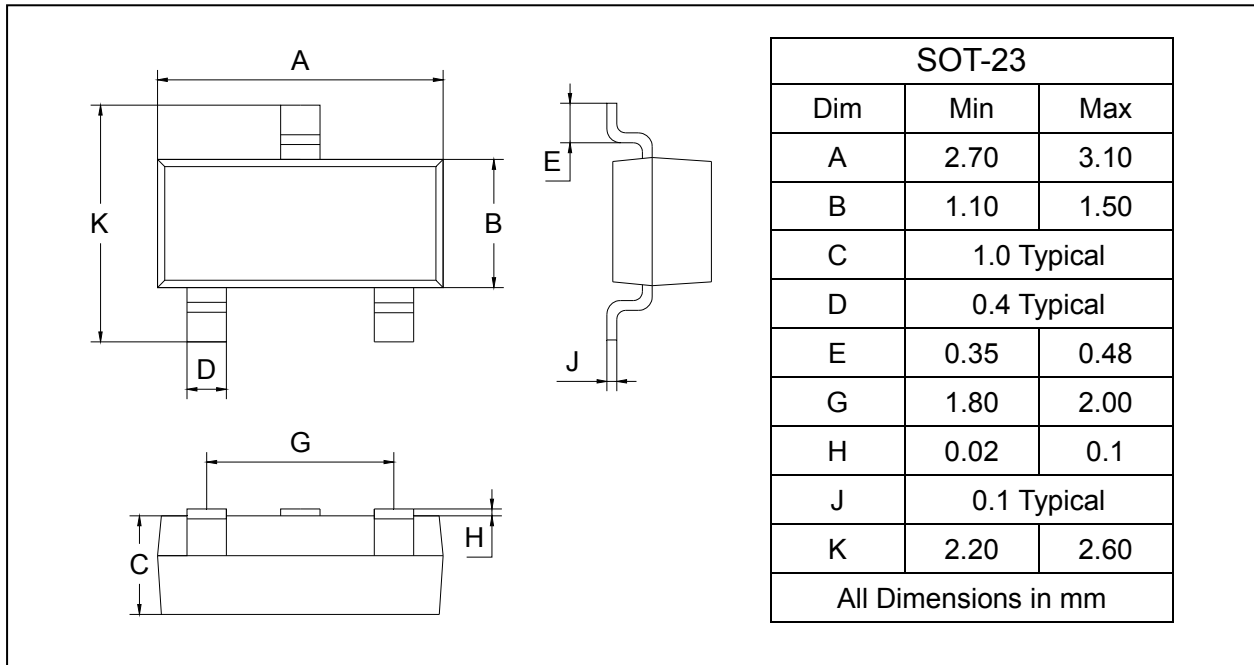
Figure 11: Normalized Maximum Transient Thermal Impedance

## P-Channel Enhancement Mode Field Effect Transistor **BL3407**

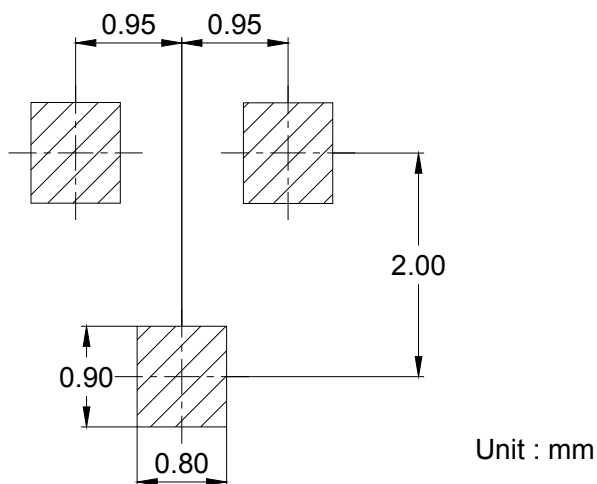
### PACKAGE OUTLINE

Plastic surface mounted package

SOT-23



### SOLDERING FOOTPRINT



### PACKAGE INFORMATION

Device	Package	Shipping
BL3407	SOT-23	3000/Tape&Reel