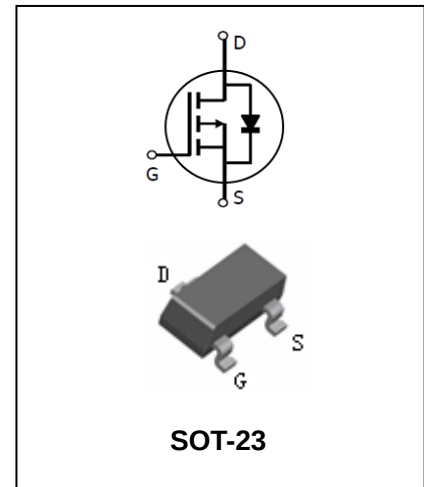


P-Channel Enhancement Mode Field Effect Transistor BL3435

FEATURES

- Electrostatic Sensitive Devices.
- $V_{DS} (V) = -20V$
- $I_D = -3.5 A (V_{GS} = -4.5V)$
- $R_{DS(ON)} < 70m\Omega (V_{GS} = -4.5V)$
 $R_{DS(ON)} < 90m\Omega (V_{GS} = -2.5V)$
 $R_{DS(ON)} < 110m\Omega (V_{GS} = -1.8V)$
 $R_{DS(ON)} < 130m\Omega (V_{GS} = -1.5V)$



APPLICATIONS

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

ORDERING INFORMATION

Type No.	Marking	Package Code
BL3435	3435	SOT-23

MAXIMUM RATING @ Ta=25°C unless otherwise specified

Symbol	Parameter	Value	Units
V_{DSS}	Drain-Source voltage	-20	V
V_{GSS}	Gate -Source voltage	± 8	V
I_D	Continuous Drain Current ^A @ TA = 25 °C @ TA = 70 °C	-3.5 -2.7	A
I_{DM}	Pulsed Drain Current ^a	-25	A
P_D	Power Dissipation @ TA = 25 °C @ TA = 70 °C	1.4 0.9	W
$R_{\theta JA}$	Thermal resistance, Junction-to-Ambient	70	°C/W
T_J, T_{stg}	Junction and Storage Temperature	-55 to +150	°C

P-Channel Enhancement Mode Field Effect Transistor BL3435

ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
STATIC PARAMETERS						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=-250\mu A$	-20	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-20, V_{GS}=0V$	-	-	-1	μA
Gate-body Leakage	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 8V$	-	-	± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-0.5	-0.65	-1.0	V
On state drain current	I_{DON}	$V_{GS}=-4.5V, V_{DS}=-5V$	-25	-	-	A
Static drain-Source on-resistance	$R_{DS(ON)}$	$V_{GS}=-4.5V, I_D=-3.5A$	-	56	70	m Ω
		$V_{GS}=-2.5V, I_D=-3.0A$	-	70	90	
		$V_{GS}=-1.8V, I_D=-2.0A$	-	85	110	
		$V_{GS}=-1.5V, I_D=-0.5A$	-	100	130	
Forward Transconductance	g_{FS}	$V_{DS}=-5V, I_D=-3.5A$	-	15	-	S
Drain-Source diode forward voltage	V_{SD}	$I_S=-1A, V_{GS}=0V$	-	-0.7	-1.0	V
Maximum Body-Diode Continuous Current	I_S		-	-	-1.4	A
DYNAMIC CHARACTERISTICS^C						
Input capacitance	C_{ISS}	$V_{GS}=0V, V_{DS}=-10V, f=1MHz$	-	560	745	pF
Output capacitance	C_{OSS}		-	80	-	
Reverse transfer capacitance	C_{RSS}		-	70	-	
Gate resistance	R_g	$V_{GS}=0V, V_{DS}=0V, f=1MHz$		15	23	Ω
SWITCHING CHARACTERISTICS^C						
Turn-On Delay Time	$t_{D(ON)}$	$V_{GS}=-4.5V, V_{DS}=-10V, R_L=3\Omega, R_{GEN}=6\Omega$	-	7.2	-	ns
Rise Time	t_r		-	36	-	ns
Turn-Off Delay Time	$t_{D(OFF)}$		-	53	-	ns
Fall Time	t_f		-	56	-	ns
Total Gate Charge	Q_g	$V_{GS}=-4.5V, V_{DS}=-10V, I_D=-3.5A$	-	8.5	11	nC
Gate-Source Charge	Q_{gs}		-	1.2	-	nC
Gate-Drain Charge	Q_{gd}		-	2.1	-	nC
Body Diode Reverse Recovery Time	t_{rr}	$I_F=-3.5A, dI/dt=100A/\mu s$	-	37	49	nS
Body Diode Reverse Recovery Charge	Q_{rr}	$I_F=-3.5A, dI/dt=100A/\mu s$	-	27	-	nC

P-Channel Enhancement Mode Field Effect Transistor BL3435

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

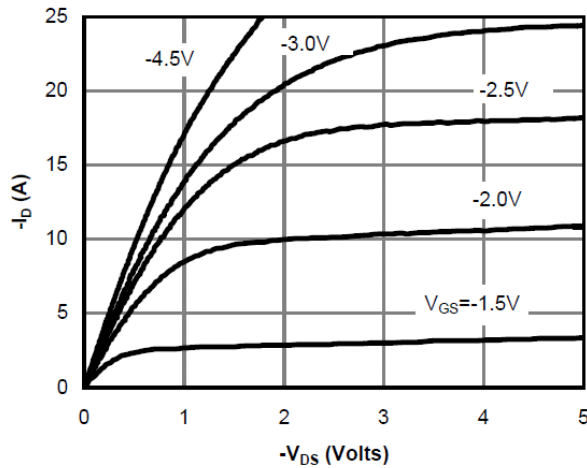


Figure 1: On-Region Characteristics

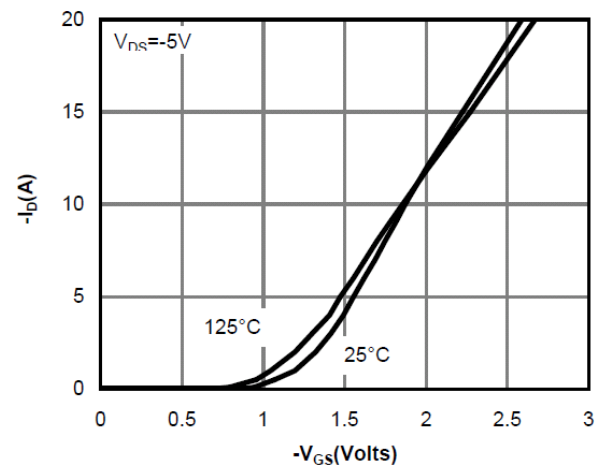


Figure 2: Transfer Characteristics

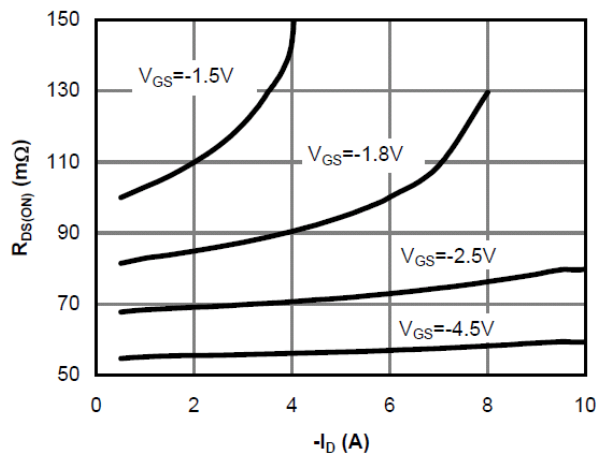


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

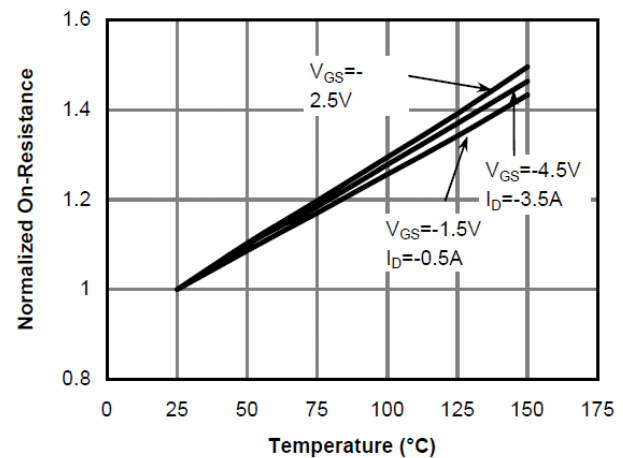


Figure 4: On-Resistance vs. Junction Temperature

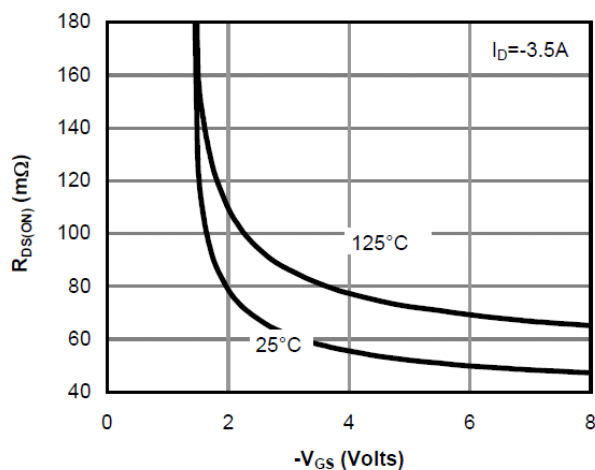


Figure 5: On-Resistance vs. Gate-Source Voltage

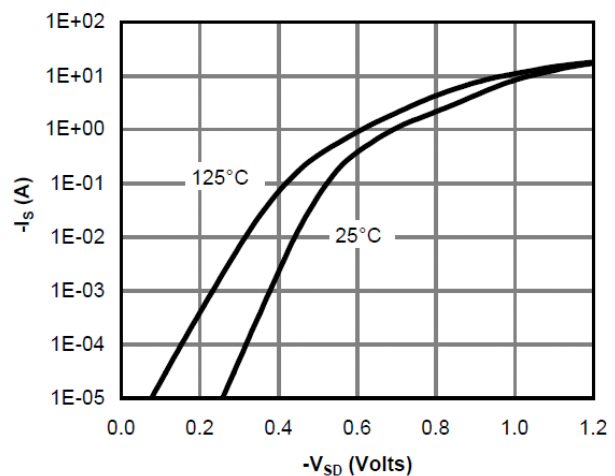


Figure 6: Body-Diode Characteristics

P-Channel Enhancement Mode Field Effect Transistor BL3435

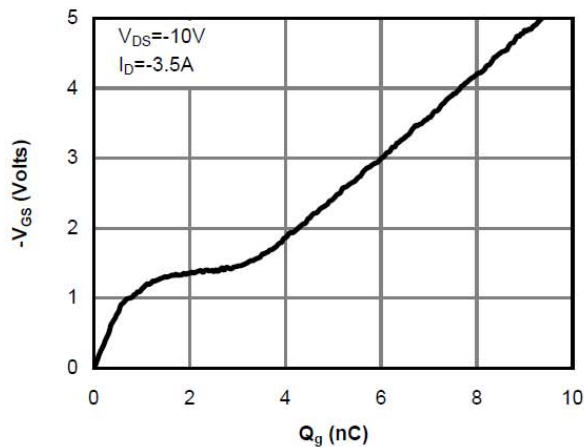


Figure 7: Gate-Charge Characteristics

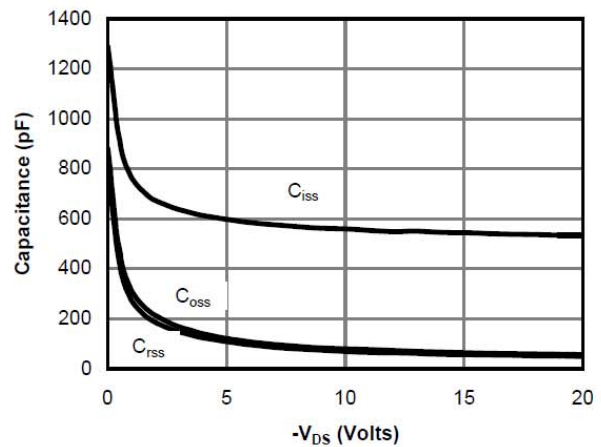


Figure 8: Capacitance Characteristics

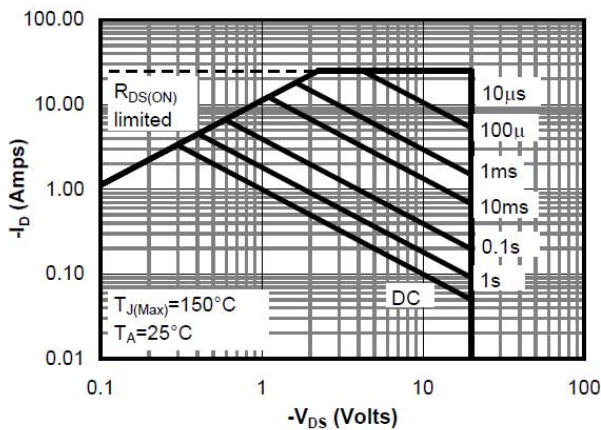


Figure 9: Maximum Forward Biased Safe Operating Area (Note E)

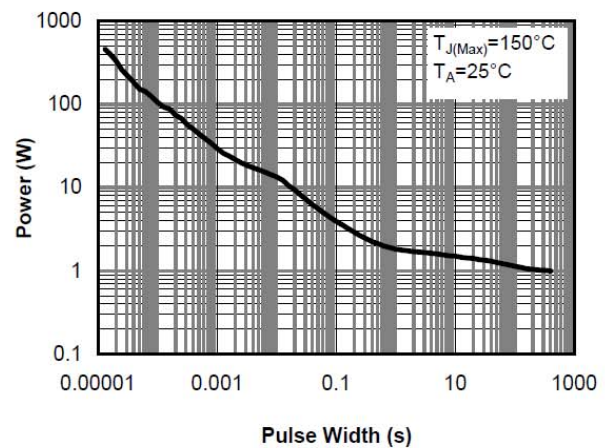


Figure 10: Single Pulse Power Rating Junction-to-Ambient (Note E)

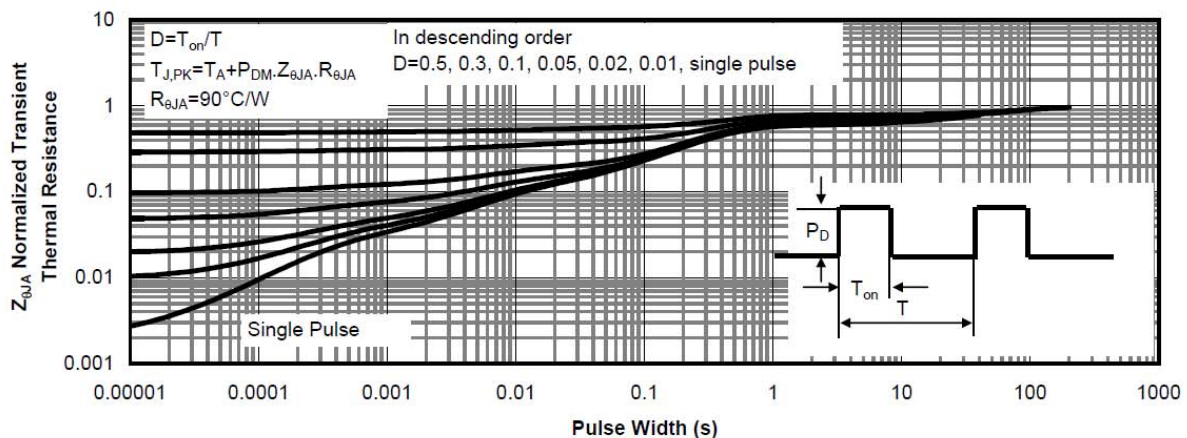


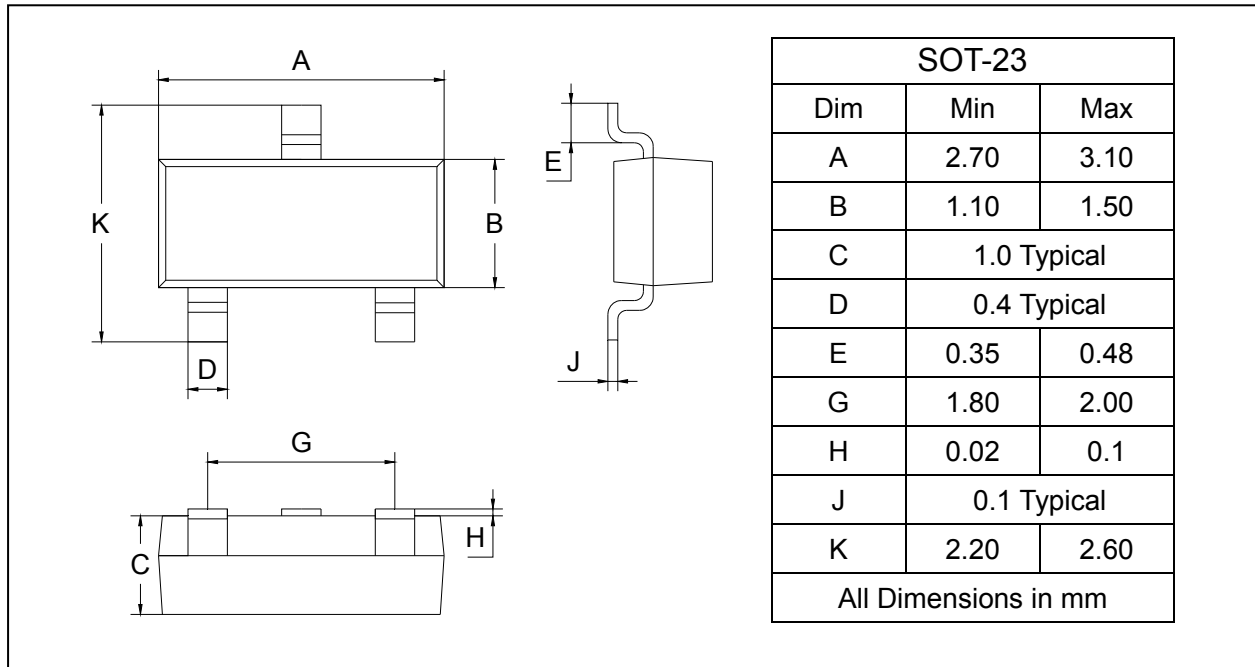
Figure 11: Normalized Maximum Transient Thermal Impedance (Note E)

P-Channel Enhancement Mode Field Effect Transistor BL3435

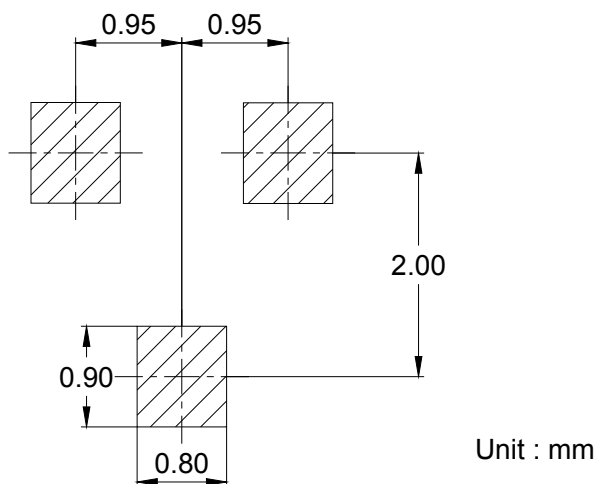
PACKAGE OUTLINE

Plastic surface mounted package

SOT-23



SOLDERING FOOTPRINT



PACKAGE INFORMATION

Device	Package	Shipping
BL3435	SOT-23	3000/Tape&Reel