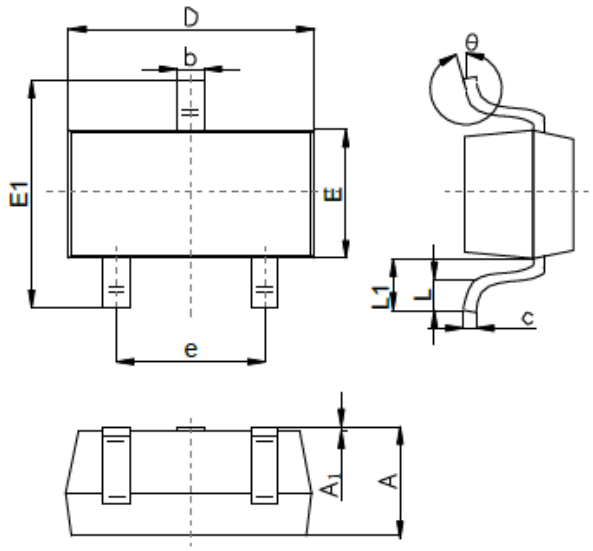
N-Channel MOSFET

Primary characteristics			
Symbol	**Parameter**	**Value**	**Unit**
I_D	Continuous drain current (@T_a=25°C)	170	mA
V_{DS}	Drain source voltage	60	V
P_D	Power Dissipation	350	mW

Features

- **SOT-23** case for easy automatic insertion
- Pb-free and **RoHS** compliant
- Trench Power LV MOSFET technology
- Low RDS(ON)
- Low Gate Charge

Case dimensions

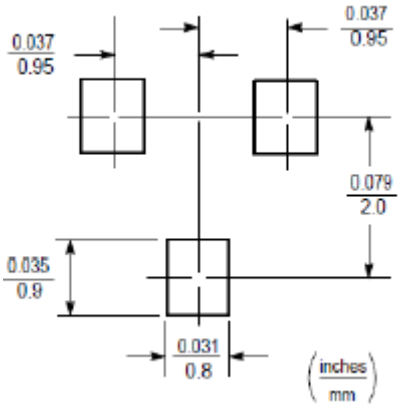


SOT-23 (TO-236AB)

	A	A1	b	c	D	E	E1	e	L	L1	θ
Min	0.65	0.00	0.30	0.08	2.70	1.15	2.10	1.70	0.15	0.35	0°
Max	1.40	0.20	0.55	0.20	3.10	1.65	2.80	2.10	0.50	0.70	12°

Absolute maximum ratings (T_A = 25°C unless otherwise noted)			
Characteristic	**Symbol**	**Value**	**Unit**
Drain-source voltage	V_{DS}	60	V
Gate-source voltage	V_{GS}	±20	V
Continuous drain current	I_D	170	mA
Pulsed drain current	I_{DM}	1200	mA
Power Dissipation	P_D	350	mW
Operating junction temperature range	T_J, T_{STG}	-50 ~ 150	°C
Maximum junction-ambient	$R_{\theta JA}$	357	°C/W

Electrical characteristics (T_A = 25°C)						
Characteristic	**Test condition**	**Symbol**	**Value**			**Unit**
			Min.	**Typ.**	**Max.**	
Drain-source breakdown voltage	I_D=250μA, V_{GS}=0V	V_{DSS}	60	-	-	V
Zero gate voltage drain current	V_{DS}=60V, V_{GS}=0V	I_{DSS}	-	-	1.0	μA
Gate-body leakage current	V_{DS}=0V, V_{GS}=±20V	I_{GSS}	-	-	±100	nA
Gate threshold voltage	V_{DS}=V_{GS}, I_D=250μA	$V_{GS(th)}$	0.9	1.4	2.0	V
Static drain-source on-state resistance	V_{GS}=10V, I_D=150mA	$R_{DS(ON)}$	-	3.3	8.0	Ω
	V_{GS}=4.5V, I_D=150mA		-	3.5	9.9	
Body diode forward voltage	V_{GS}=4.5V, I_S=170mA	V_{SD}	-	-	1.2	V
Dynamic electrical characteristics						
Characteristic	**Test condition**	**Symbol**	**Value**			**Unit**
			Min.	**Typ.**	**Max.**	
Input capacitance	V_{DS}=30V V_{GS}=0V f=1.0MHz	C_{iss}	-	43	-	pF
Output capacitance		C_{oss}	-	2.9	-	
Reverse transfer capacitance		C_{rss}	-	1.8	-	
Total Gate Charge	V_{DS}=30V V_{GS}=10V I_d=150mA	Q_g	-	1.77	-	nC
Gate Source Charge		Q_{gs}	-	0.57	-	nC
Gate Drain Charge		Q_{gd}	-	0.18	-	nC
Switching characteristics						
Characteristic	**Test condition**	**Symbol**	**Value**			**Unit**
			Min.	**Typ.**	**Max.**	
Turn on delay time	V_{DS}=30V V_{GS}=4.5V R_G=2.5Ω I_D=150mA	$t_{d(ON)}$	-	8.6	-	ns
Turn on rise time		t_r	-	20	-	
Turn off delay time		$t_{d(OFF)}$	-	15	-	
Turn off fall time		t_f	-	77	-	
Source drain diode characteristics						
Characteristic	**Test condition**	**Symbol**	**Value**			**Unit**
			Min.	**Typ.**	**Max.**	
Source drain current(Body Diode)	**T**A=25℃	I_{SD}	-	-	170	mA
Drain-Source Diode Forward Voltage	**I**S=-170mA, **V**GS=0V	V_{SD}	-	-	1.2	V

Suggested soldering pad layout

SOT-23

Ordering information			
Part Number	**Package**	**Shipping Quantity**	**Dimensions**
BSS84	SOT-23	**3 000 pcs / 7" reel** **24 000 pcs / box** **120 000pcs / carton**	---

Disclaimer

Akyga semi reserves the right to make changes without notice to any product specification herein, to make corrections, modifications, enhancements or other changes. Akyga semi or anyone on its behalf assumes no responsibility or liability for any errors or inaccuracies. Data sheet specifications and its information contained are intended to provide a product description only. "Typical" parameters which may be included on Akyga semi data sheets and/ or specifications can and do vary in different applications and actual performance may vary over time. Akyga semi does not assume any liability arising out of the application or use of any product or circuit. Akyga semi products are not designed, intended or authorized for use in medical, life-saving implant or other applications intended for life-sustaining or other related applications where a failure or malfunction of component or circuitry may directly or indirectly cause injury or threaten a life without expressed written approval of Akyga semi. Customers using or selling Akyga semi components for use in such applications do so at their own risk and shall agree to fully indemnify Akyga semi and its subsidiaries harmless against all claims, damages and expenditures.