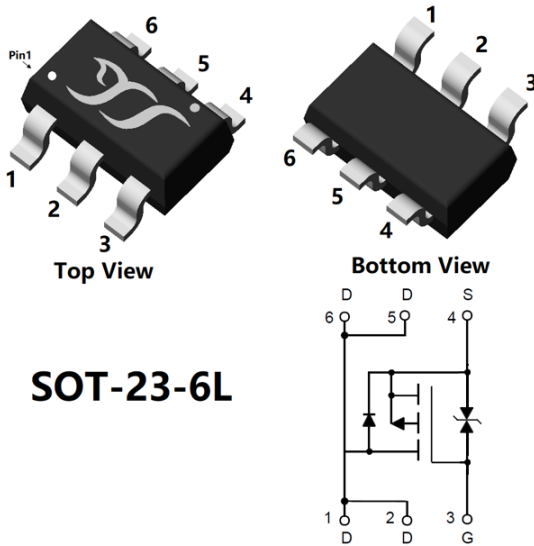




P-Channel Enhancement Mode Field Effect Transistor



SOT-23-6L

Product Summary

- V_{DS} -30V
- I_D -3.1A
- $R_{DS(ON)}$ (at $V_{GS}=-10V$) $<85m\Omega$
- $R_{DS(ON)}$ (at $V_{GS}=-4.5V$) $<142m\Omega$
- ESD Protected Up to 2KV(HBM)

General Description

- High Speed switching
- High density cell design for low $R_{DS(ON)}$
- Moisture Sensitivity Level 1
- Epoxy Meets UL94 V-0 Flammability Rating
- Halogen Free

Applications

- Motherboard/Computing

■ Limiting Values

Parameter	Conditions		Symbol	Min	Max	Unit
Drain-source Voltage			V _{DS}	-	-30	V
Gate-source Voltage			V _{GS}	-20	20	
Continuous Drain Current (Note 1,2)	Steady-State	T _A =25°C,V _{GS} =-10V	I _D	-	-3.1	A
		T _A =100°C,V _{GS} =-10V		-	-1.96	
Pulsed Drain Current	T _A =25°C,t _p ≤10μs		I _{DM}	-	-24.8	
Maximum Body-Diode Continuous Current	T _A =25°C		I _S		-1	
Total Power Dissipation (Note 1,2)	Steady-State	T _A =25°C	P _D	-	1.27	W
		T _A =100°C		-	0.51	
Junction and Storage Temperature Range			T _J ,T _{STG}	-55	150	°C

■ Thermal Resistance

Parameter		Symbol	Typ	Max	Units
Thermal Resistance Junction-to-Ambient (Note 2)	Steady-State	$R_{\theta JA}$	-	98	$^{\circ}C/W$



YJJ085P03AK

■ Electrical Characteristics

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Static Parameter						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V,I _D =-250μA,T _j =25°C	-30	-	-	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-30V,V _{GS} =0V,T _j =25°C	-	-	-1	μA
		V _{DS} =-30V,V _{GS} =0V,T _j =150°C	-	-	-100	
Gate-Source Leakage Current	I _{GSS}	V _{GS} =±20V,V _{DS} =0V,T _j =25°C	-	-	±10	μA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} ,I _D =-250μA,T _j =25°C	-1	-1.5	-2	V
Static Drain-Source On-Resistance	R _{DS(ON)}	V _{GS} =-10V,I _D =-1.8A,T _j =25°C	-	65	85	mΩ
		V _{GS} =-4.5V,I _D =-0.9A,T _j =25°C	-	95	142	mΩ
Diode Forward Voltage	V _{SD}	I _S =-1A,V _{GS} =0V,T _j =25°C	-	-0.82	-1.2	V
Gate Resistance	R _G	f=1MHz,T _j =25°C	-	19	-	Ω
Dynamic Parameters						
Input Capacitance	C _{iss}	V _{DS} =-15V,V _{GS} =0V,f=1MHz,T _j =25°C	-	216	-	pF
Output Capacitance	C _{oss}		-	42	-	
Reverse Transfer Capacitance	C _{rss}		-	30	-	
Switching Parameters						
Total Gate Charge	Q _g	V _{GS} =-10V,V _{DS} =-15V,I _D =-1.8A,T _j =25°C	-	5.2	-	nC
Gate-Source Charge	Q _{gs}		-	0.5	-	
Gate-Drain Charge	Q _{gd}		-	0.9	-	
Reverse Recovery Charge	Q _{rr}	I _F =-1.8A,di/dt=100A/μs,V _{GS} =0V, V _R =-15V,T _j =25°C	-	8	-	nC
Reverse Recovery Time	t _{rr}		-	14	-	ns
Turn-on Delay Time	t _{D(on)}	V _{GS} =-10V,V _{DS} =-15V,I _D =-1.8A, R _{GEN} =3Ω,T _j =25°C	-	4.5	-	ns
Turn-on Rise Time	t _r		-	2.2	-	
Turn-off Delay Time	t _{D(off)}		-	16	-	
Turn-off Fall Time	t _f		-	10.6	-	

Note:

- The entire application environment impacts the thermal resistance values shown, they are not constants and are only valid for the particular conditions noted.
- The value of $R_{\theta JA}$ is measured with the device mounted on the 40mm*40mm*1.1mm single layer FR-4 PCB board with 1 in² pad of 2oz. Copper, in the still air environment with $T_A=25^\circ C$. The maximum allowed junction temperature of $150^\circ C$. The value in any given application depends on the user's specific board design.

■ Typical Electrical and Thermal Characteristics Diagrams

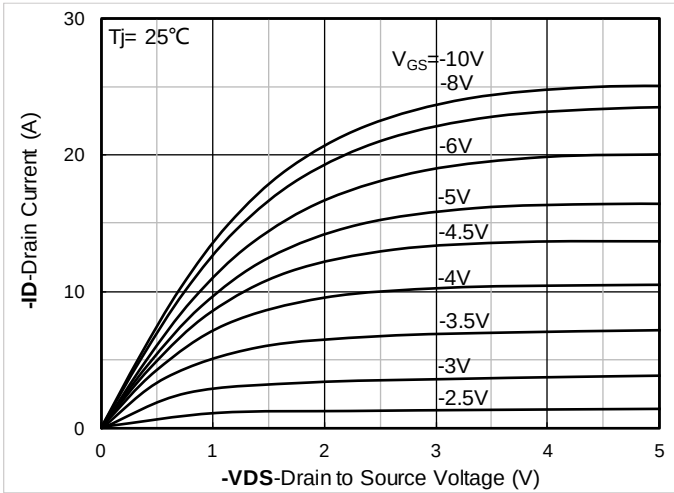


Figure 1. Output Characteristics; typical values

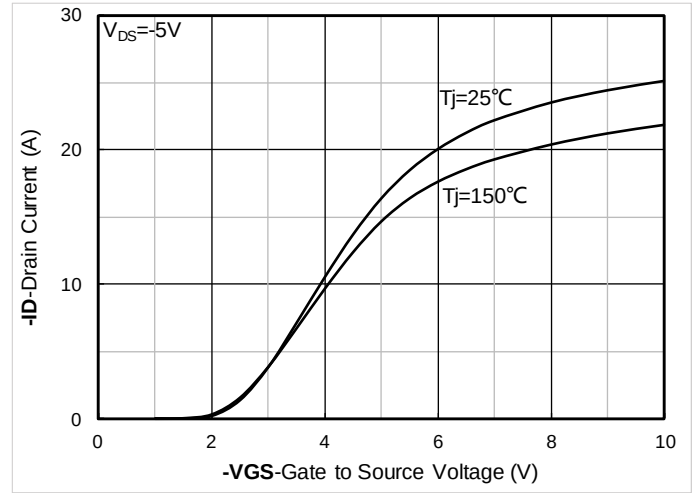


Figure 2. Transfer Characteristics; typical values

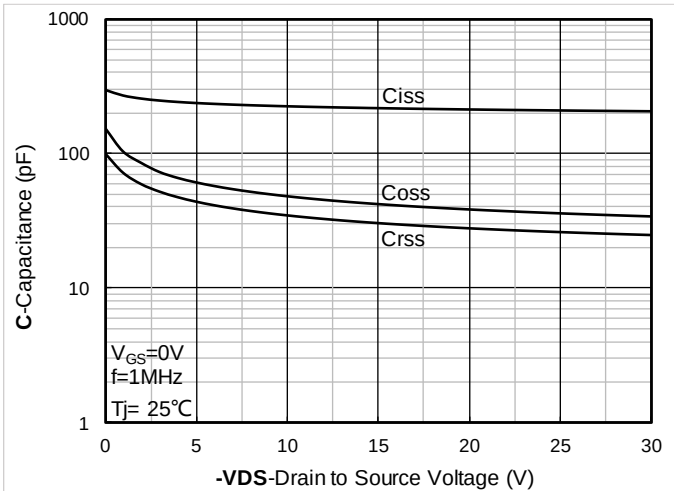


Figure 3. Capacitance Characteristics; typical values

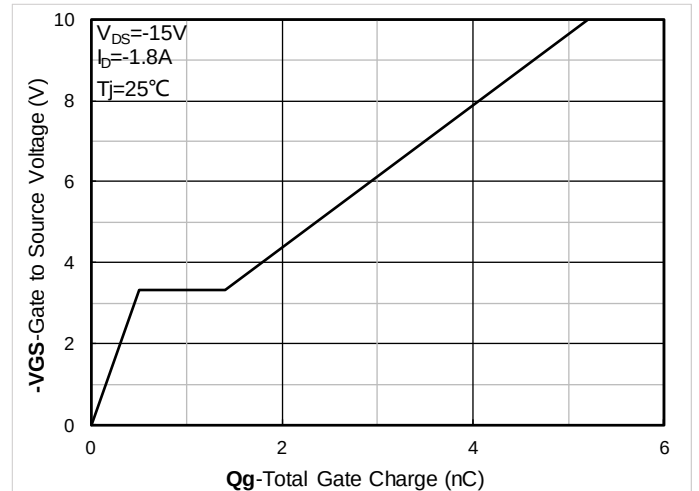


Figure 4. Gate Charge; typical values

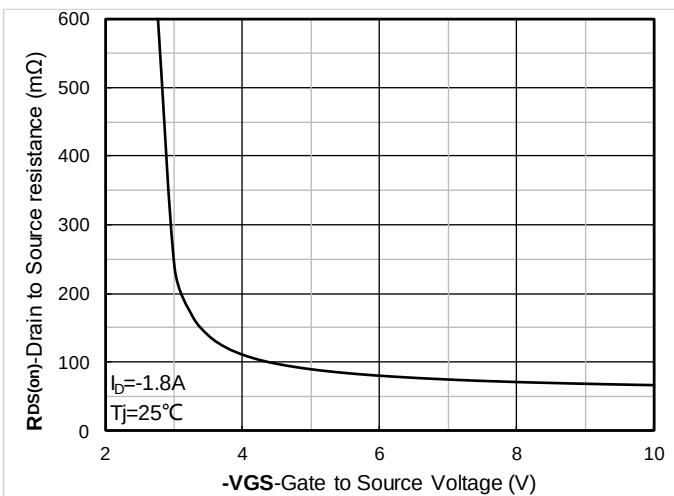


Figure 5. On-Resistance vs. Gate to Source Voltage; typical values

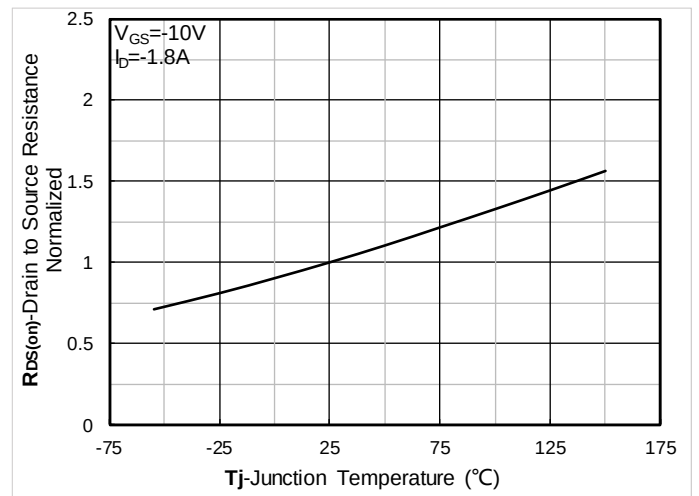


Figure 6. Normalized On-Resistance

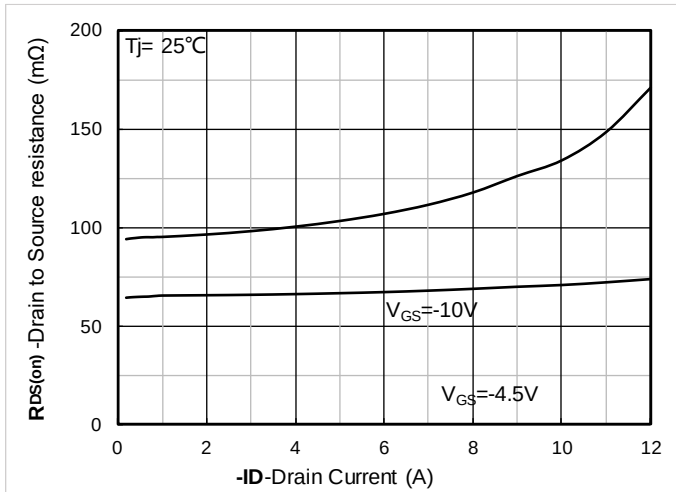


Figure 7. $R_{DS(on)}$ vs. Drain Current; typical values

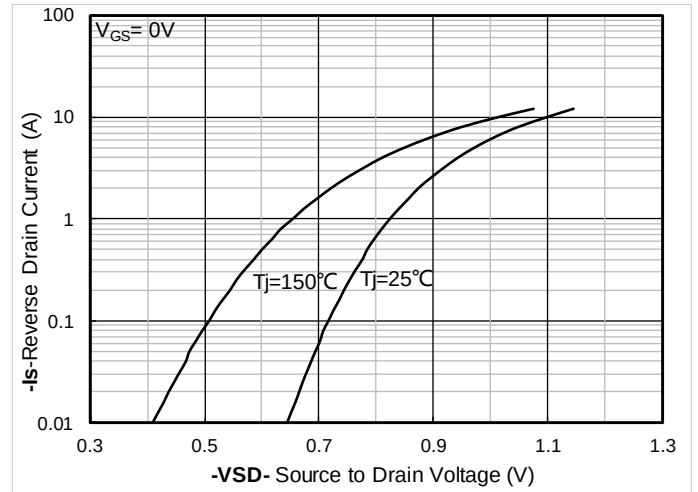


Figure 8. Forward characteristics of reverse diode; typical values

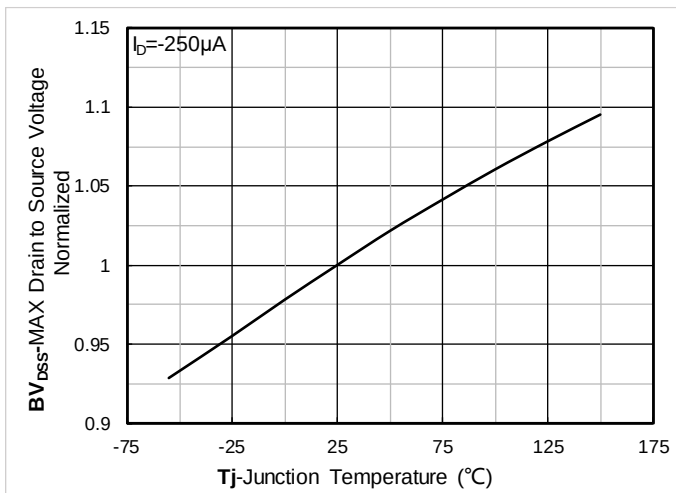


Figure 9. Normalized breakdown voltage

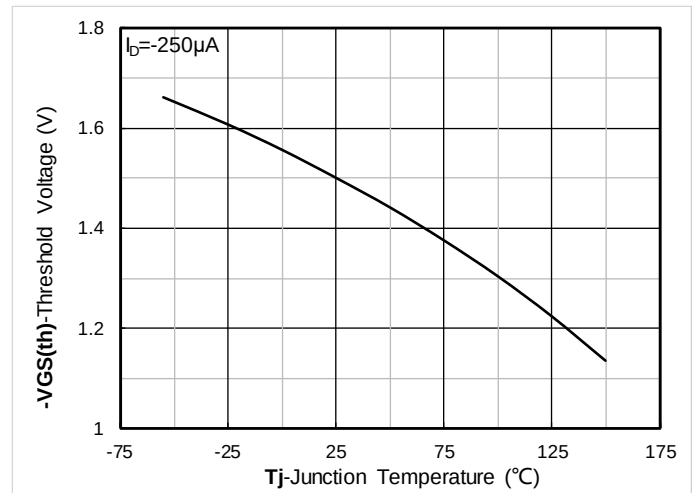


Figure 10. Gate Threshold voltage; typical values

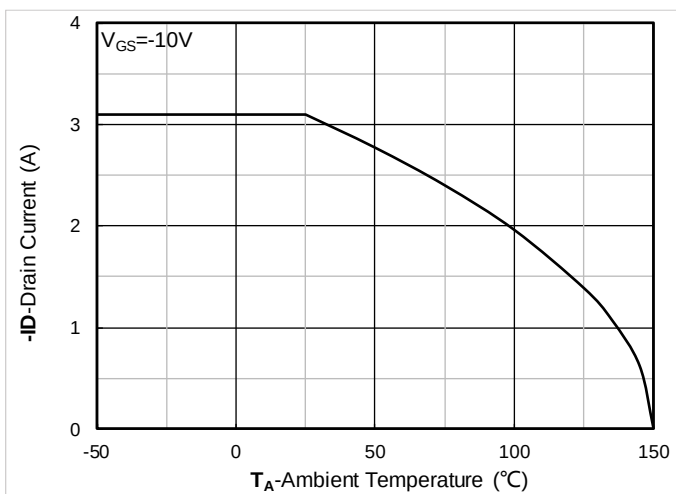


Figure 11. Current dissipation

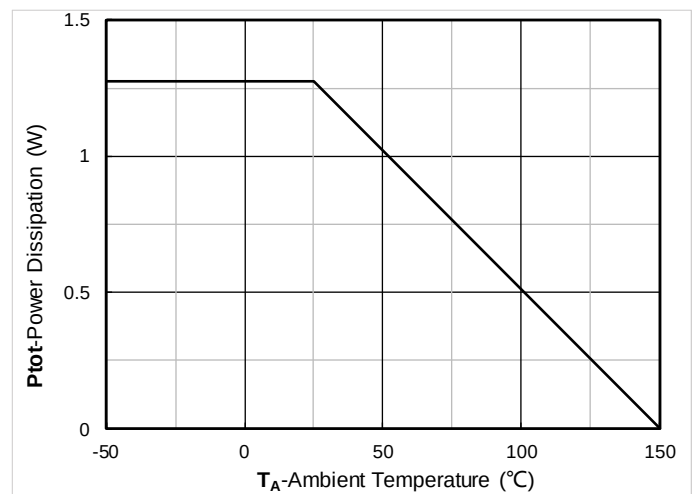


Figure 12. Power dissipation

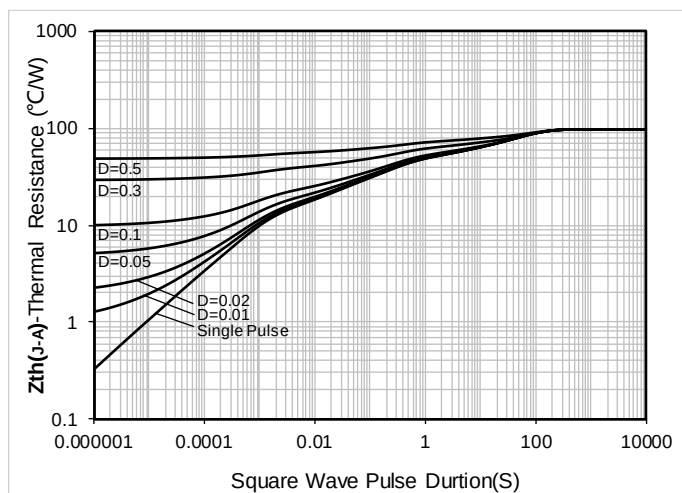


Figure 13. Maximum Transient Thermal Impedance

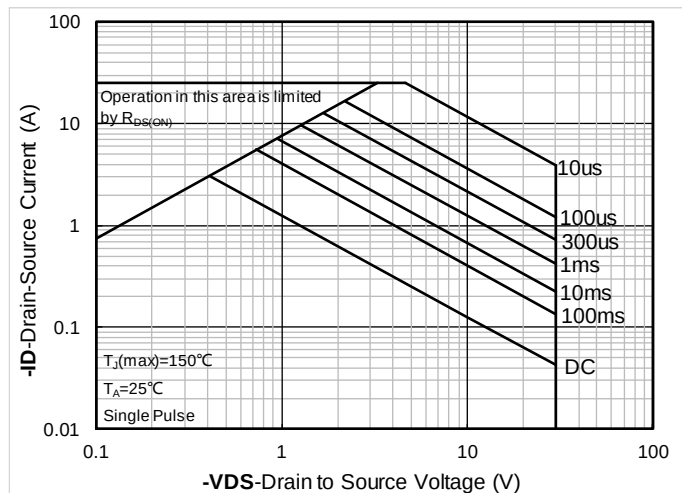
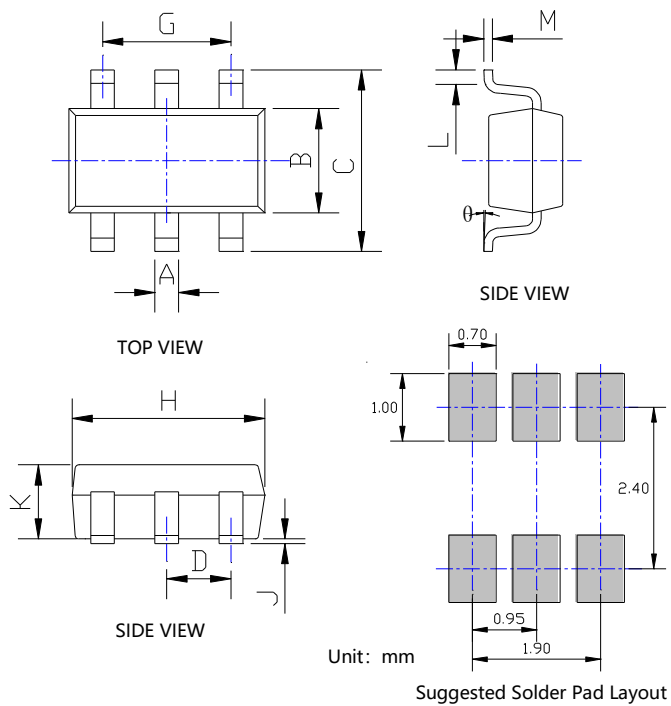


Figure 14. Safe Operation Area



■ SOT-23-6L Package Information

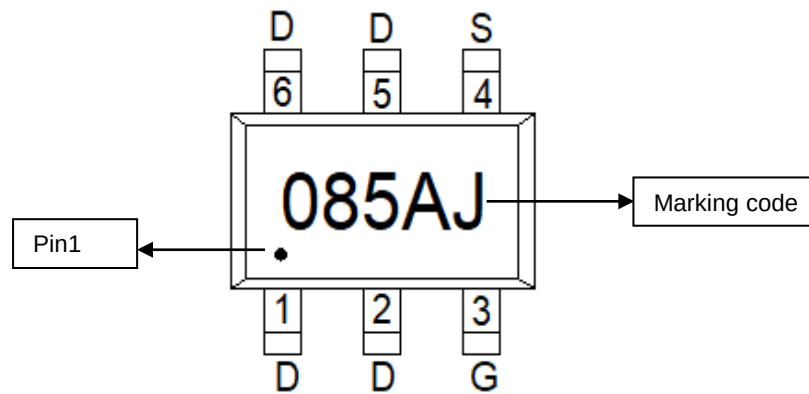


SYMBOL	DIMENSIONS			
	INCHES		Millimeter	
	MIN.	MAX.	MIN.	MAX.
A	0.012	0.020	0.300	0.500
B	0.059	0.067	1.500	1.700
C	0.104	0.116	2.650	2.950
D	0.037BSC		0.950BSC	
G	0.075BSC		1.900BSC	
H	0.111	0.119	2.820	3.020
J	0.000	0.004	0.000	0.100
K	0.041	0.045	1.050	1.150
L	0.012	0.024	0.300	0.600
M	0.004	0.008	0.100	0.200
θ	0°	8°	0°	8°

Note:

- 1.Controlling dimension:in millimeters.
- 2.General tolerance:±0.05mm.
- 3.The pad layout is for reference purposes only.

■ Marking Information



Note:

1. All marking is at middle of the product body
2. All marking is in laser printing
3. 085AJ is marking code
4. Body color: Black



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