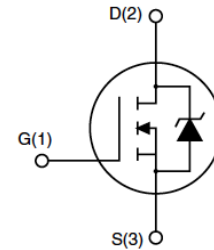


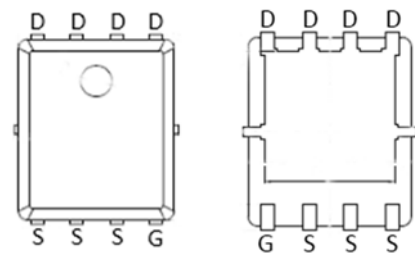
Features

- 150V,90A
 $R_{DS(on)} < 8.8m\Omega @ V_{GS}=10V$ TYP:7.95m Ω
 $R_{DS(on)} < 11.5m\Omega @ V_{GS}=6V$ TYP:9.42 m Ω
- Advanced trench cell design
- Super Trench
- Tj max 175 $^{\circ}C$
- Low Thermal Resistance
- MSL1
- Low RDS(on) trench technology



Applications

- DC/DC conversion
- Power switch
- Motor drivers



PDFN5X6

Package Marking and Ordering Information

Device Marking	Device	Device Package	Reel Size	Tape width	Quantity (PCS)
G088N15G	APG088N15G	PDFN5X6	-	-	5000

ABSOLUTE MAXIMUM RATINGS (T_a=25 $^{\circ}C$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V _{DS}	150	V
Gate-Source Voltage	V _{GS}	±25	V
Continuous Drain Current (T _c =25 $^{\circ}C$)	I _D	90	A
Continuous Drain Current (T _c =100 $^{\circ}C$)	I _D	63	A
Pulsed Drain Current (c,d)	I _{DM}	360	A
Single Pulsed Avalanche Current (V _{DD} =100V,L=0.05mH)	I _{AS}	110	A
Single Pulsed Avalanche Energy (V _{DD} =100V,L=1.0mH)	E _{AS}	760	mJ
Drain Power Dissipation ^(c)	P _D	187.5	W
Thermal Resistance from Junction to Case ^(c)	R _{θJC}	0.8	$^{\circ}C/W$
Thermal Resistance- Junction to Ambient ^(c)	R _{θJA}	62.5	$^{\circ}C/W$
Junction Temperature	T _J	175	$^{\circ}C$
Storage Temperature	T _{STG}	-55~ +175	$^{\circ}C$

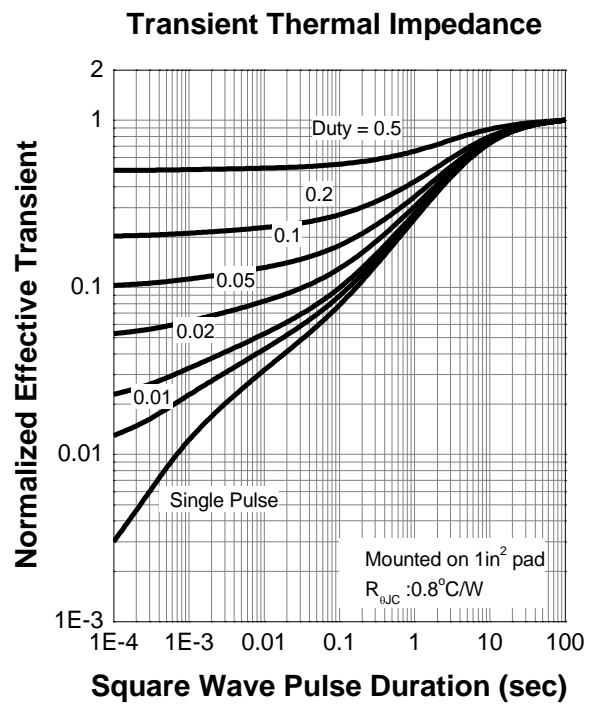
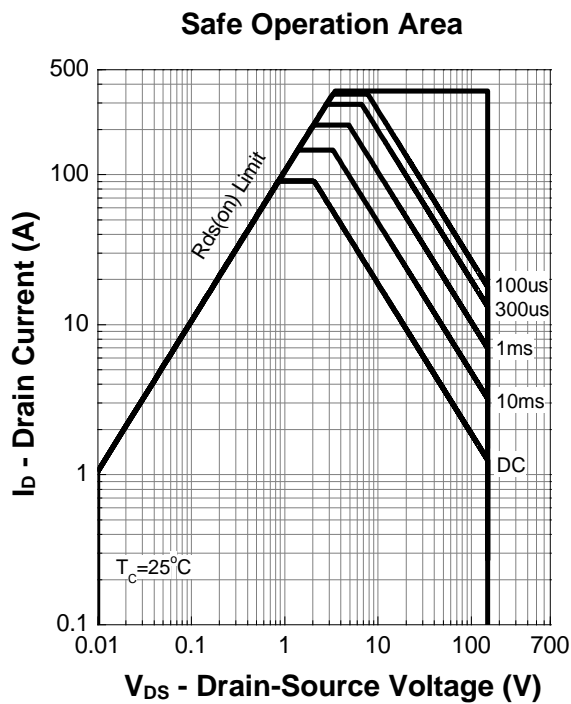
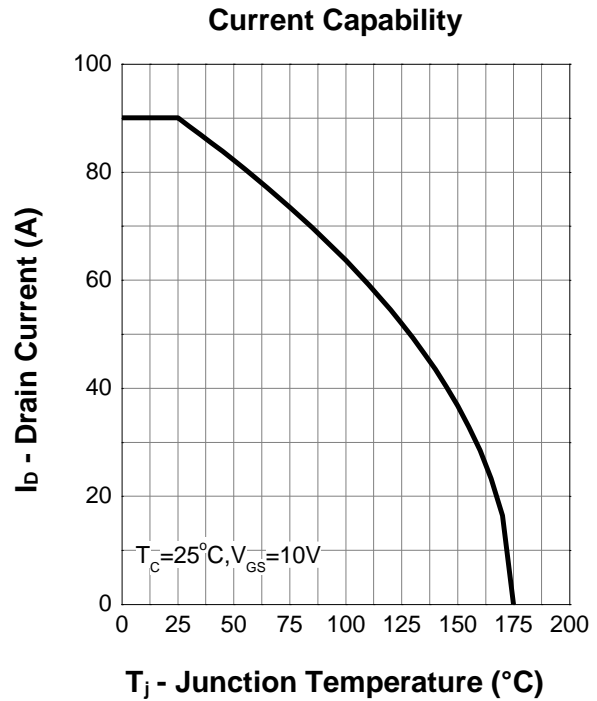
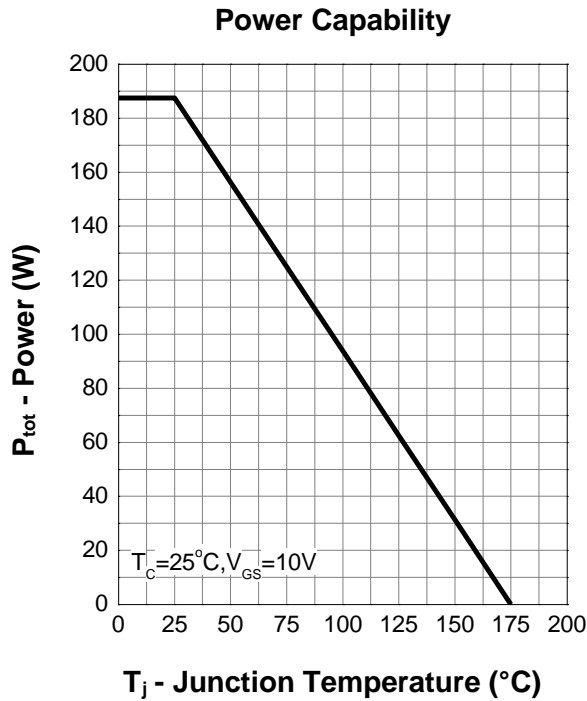
MOSFET ELECTRICAL CHARACTERISTICS(T_a=25°C unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Static Characteristics						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D =250μA	150	-	-	V
Zero gate voltage drain current	I _{DSS}	V _{DS} =100V, V _{GS} = 0V	-	-	1	μA
Gate-body leakage current	I _{GSS}	V _{GS} = ±25V, V _{DS} = 0V	-	-	±100	nA
Gate threshold voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	2	-	4	V
Drain-source on-resistance ^(a)	R _{DS(on)}	V _{GS} =10V, I _D =30A	-	7.95	8.8	mΩ
		V _{GS} =6V, I _D =20A	-	9.42	11.5	mΩ
Dynamic characteristics						
Input Capacitance	C _{iss}	V _{DS} =75V, V _{GS} =0V, f =1.0MHz	-	4582	-	pF
Output Capacitance	C _{oss}		-	317	-	
Reverse Transfer Capacitance	C _{rss}		-	35	-	
Switching characteristics						
Turn-on delay time	t _{d(on)}	V _{DD} =75V, I _D =30A, R _G =6Ω, V _G =10V, R _L =2.5Ω	-	16	-	ns
Turn-on rise time	t _r		-	29	-	
Turn-off delay time	t _{d(off)}		-	44	-	
Turn-off fall time	t _f		-	22	-	
Total Gate Charge	Q _g	V _{DS} =75V, I _D =30A, V _{GS} =10V	-	68	-	nC
Gate-Source Charge	Q _{gs}		-	23	-	
Gate-Drain Charge	Q _{gd}		-	12	-	
Source-Drain Diode characteristics						
Diode Forward voltage ^(a)	V _{SD}	T _c =25°C, V _{GS} =0V, I _S =30A	-	-	1.3	V
Diode Forward current	I _S	T _c =25°C	-	-	90	A
Body Diode Reverse Recovery Time	t _{rr}	T _c =25°C, I _F =30A, di/dt=100A/us		92		ns
Body Diode Reverse Recovery Charge	Q _{rr}	T _c =25°C, I _F =30A, di/dt=100A/us		340		uc

Notes:

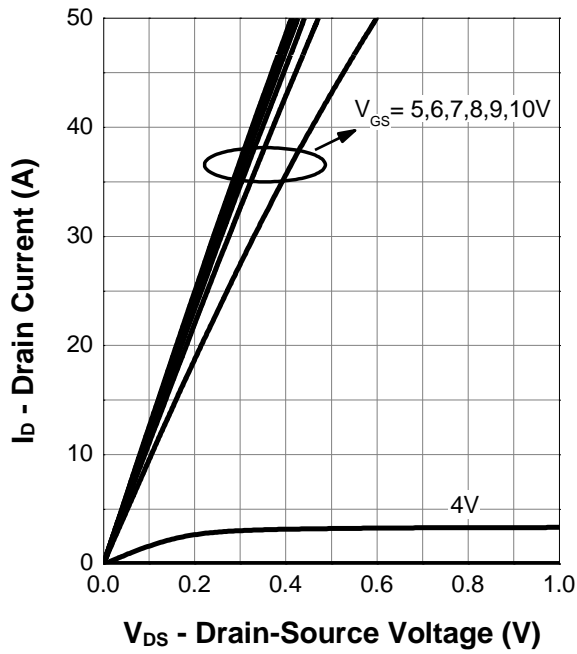
- a) Pulse test ; pulse width ≤ 300 μs, duty cycle ≤ 2 %
- b) Guaranteed by design, not subject to production testing
- c) Surface Mounted on 1 in2 pad area, t ≤ 10 sec
- d) Pulse width ≤ 300 μs, duty cycle ≤ 2 %
- e) Limited by bonding wire

Typical Characteristics (Cont.)

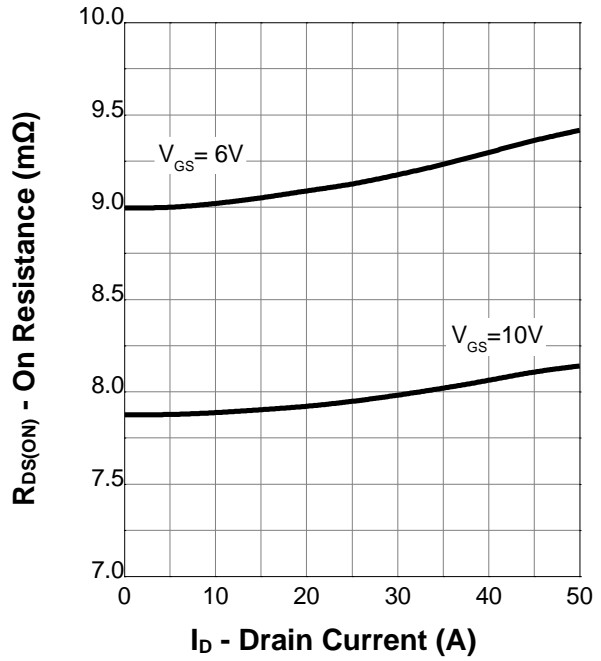


Typical Characteristics (Cont.)

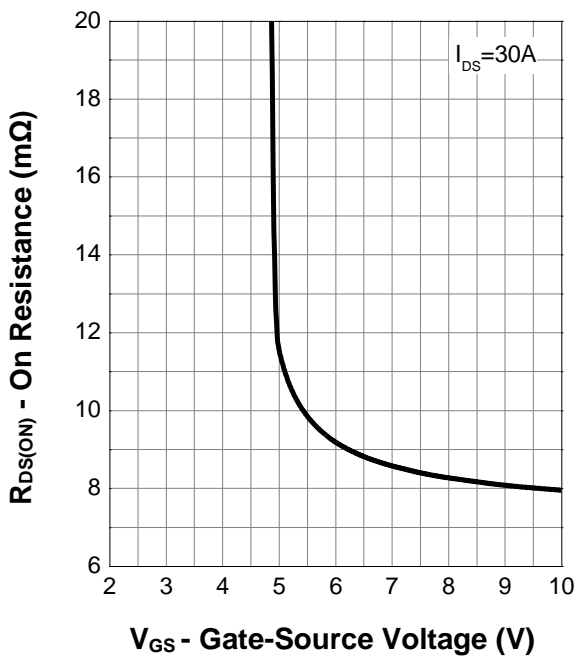
Output Characteristics



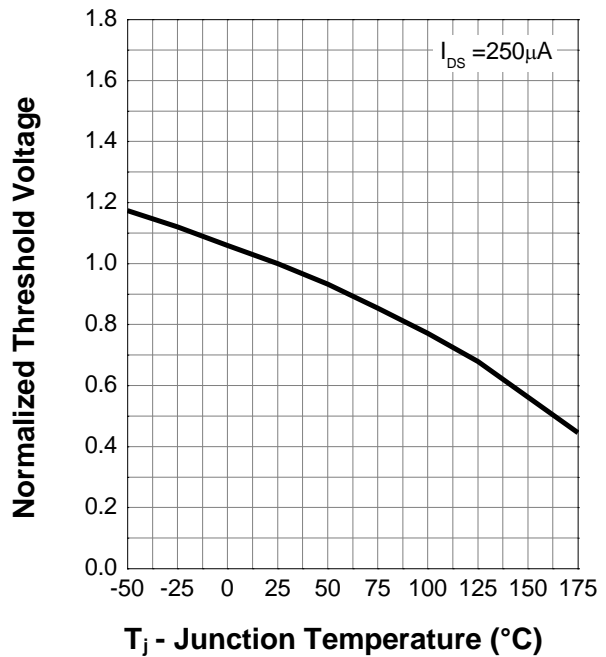
On Resistance



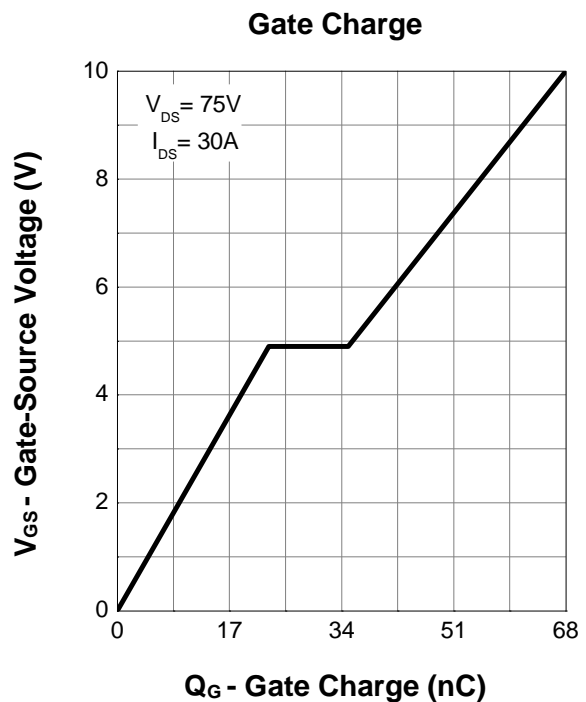
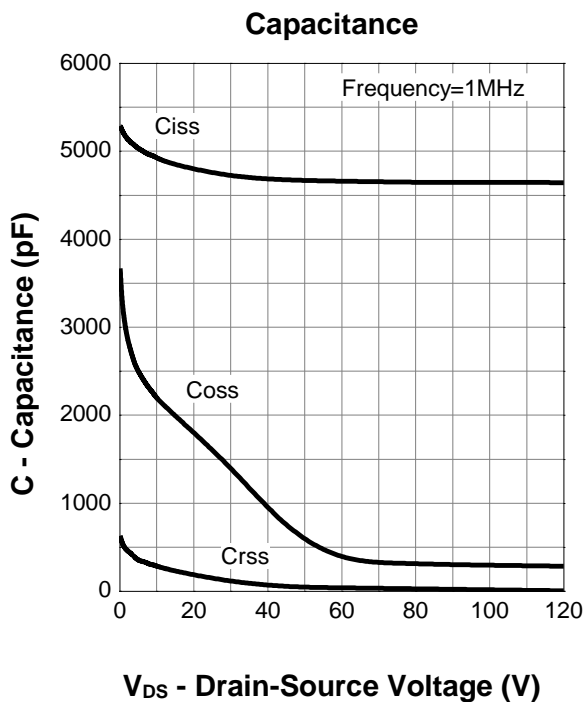
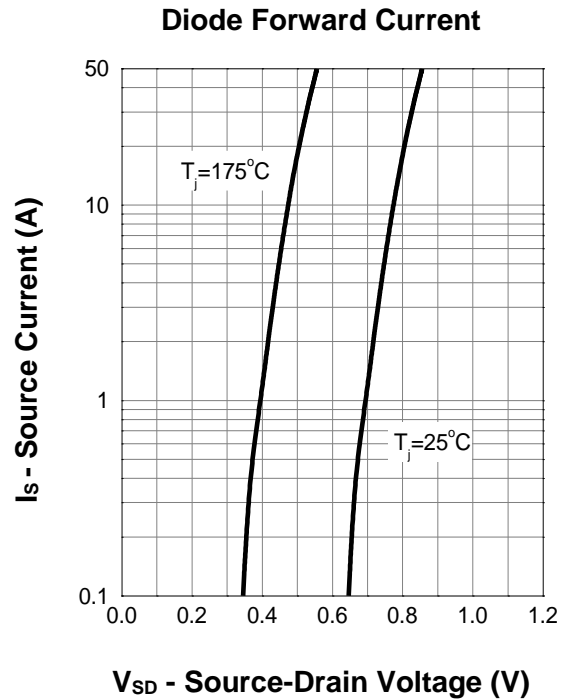
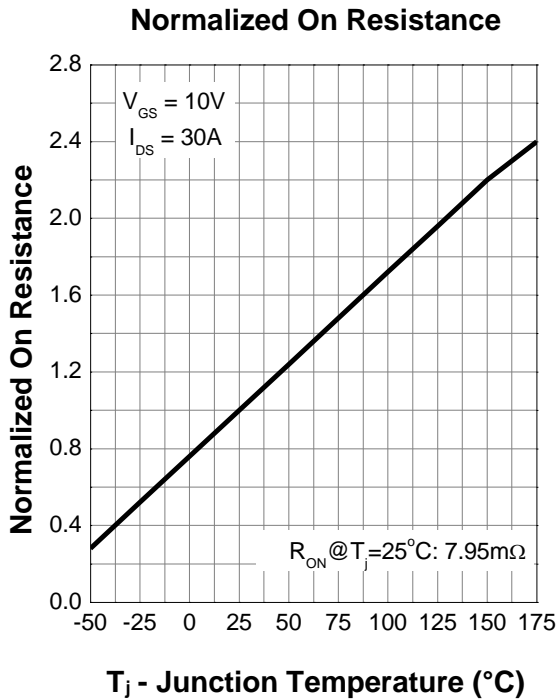
Transfer Characteristics



Normalized Threshold Voltage

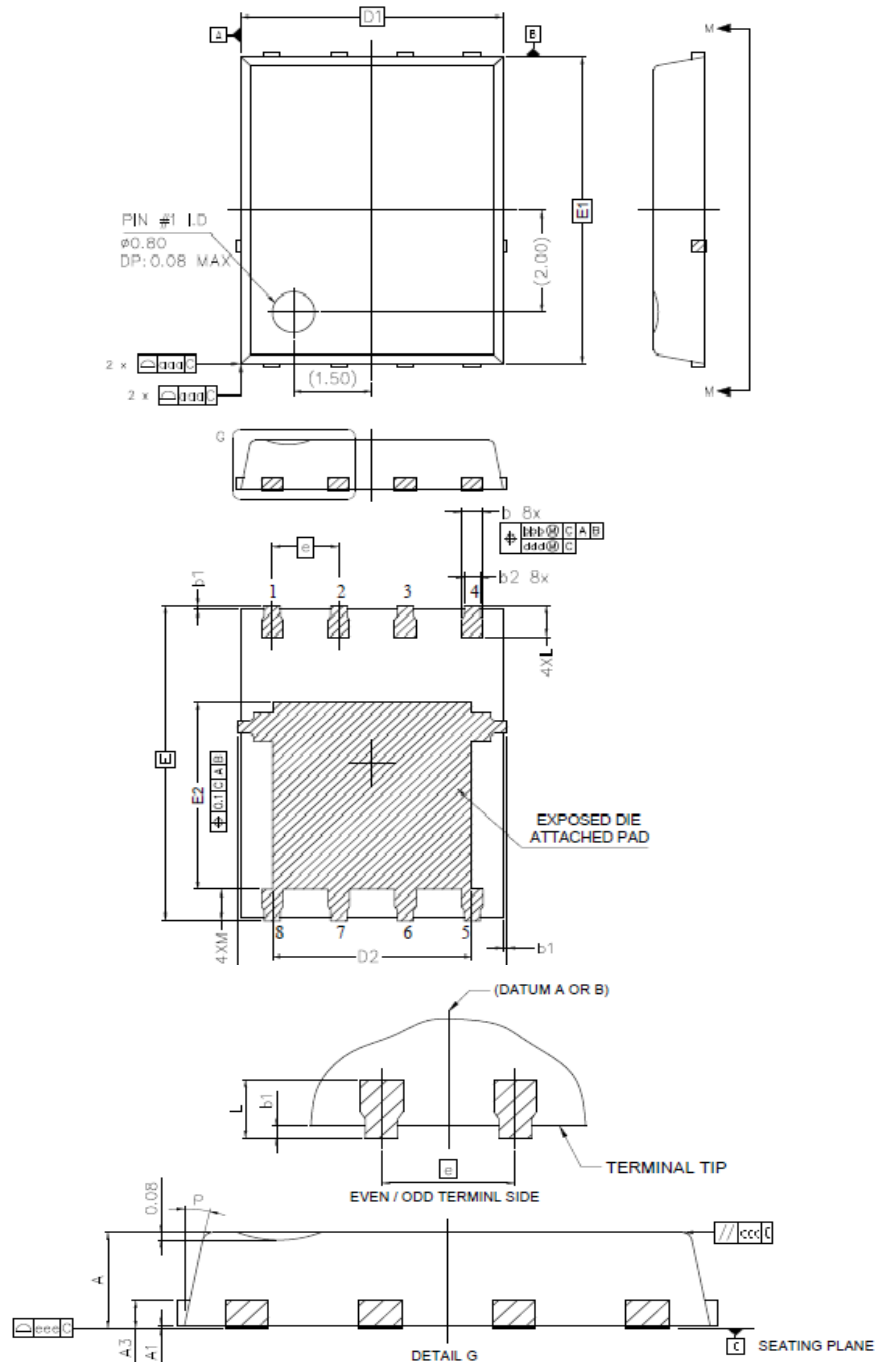


Typical Characteristics (Cont.)



Package Dimensions

PDFN5x6 Package



Package Dimensions

PDFN5x6 Package

Symbol	Dimensions In Millimeters	
	MIN.	MAX.
A	0.95	1.05
A1	0.00	0.05
A3	0.25 REF	
b	0.31	0.51
b1	0.03	0.13
b2	0.21	0.41
D	5.15 BSC	
D1	5.00 BSC	
D2	3.70	3.90
E	6.15 BSC	
E1	6.00 BSC	
E2	3.56	3.76
e	1.27 BSC	
L	0.51	0.71
M	0.51	0.71
P	10°	12°
aaa	0.10	
bbb	0.10	
ccc	0.10	
ddd	0.05	
eee	0.08	