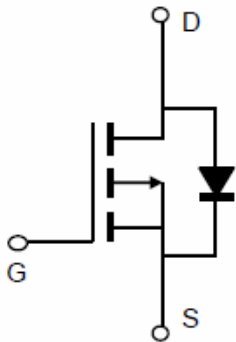


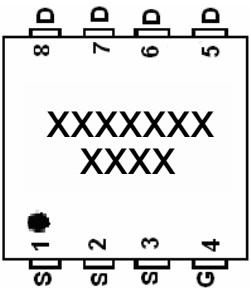
P-Channel MOSFET
KI30P03DFN

■ Features

- $V_{DS}(V) = -30V$
- $I_D = -30\text{ A}$ ($V_{GS} = \pm 20V$)
- $R_{DS(ON)} < 15m\Omega$ ($V_{GS} = -10V$)
- $R_{DS(ON)} < 25m\Omega$ ($V_{GS} = -4.5V$)



Schematic diagram



Marking and pin assignment

DFN3.3X3.3

■ Absolute Maximum Ratings $T_a = 25^{\circ}C$

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	-30	V
Gate-Source Voltage	V_{GS}	± 20	
Continuous Drain Current	I_D	-30	A
Continuous Drain Current ($T_c=100^{\circ}C$)		-21.2	
Pulsed Drain Current Note 1		-80	
Power Dissipation	P_D	35	W
Thermal Resistance.Junction- to-Case Note 2	R_{thJC}	3.57	$^{\circ}C/W$
Junction Temperature	T_J	150	$^{\circ}C$
Junction Storage Temperature Range	T_{stg}	-55 to 150	

P-Channel MOSFET

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■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V _{DSS}	I _D =-250 μ A, V _{GS} =0V	-30			V
Zero Gate Voltage Drain Current	I _{DSS}	V _D =-30V, V _{GS} =0V			-1	μ A
Gate-Body Leakage Current	I _{GSS}	V _D =0V, V _{GS} = $\pm$ 20V			$\pm$ 100	nA
Gate Threshold Voltage	V _{GS(th)}	V _D =V _{GS} , I _D =-250 μ A	-1		-1.9	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =-10V, I _D =-15A			15	m Ω
		V _{GS} =-4.5V, I _D =-15A			25	
Forward Transconductance	g _{FS}	V _D =-5V, I _D =-15A	15			S
Input Capacitance	C _{iss}	V _{GS} =0V, V _D =-25V, f=1MHz		2130		pF
Output Capacitance	C _{oss}			302		
Reverse Transfer Capacitance	C _{rss}			227		
Total Gate Charge	Q _g	V _{GS} =-10V, V _D =-15V, I _D =-20A		45.6		nC
Gate Source Charge	Q _{gs}			4.6		
Gate Drain Charge	Q _{gd}			11.1		
Turn-On DelayTime	t _{d(on)}	V _{GS} =-10V, V _D =-15V, I _D =-15A, R _{GEN} =1 Ω		12		ns
Turn-On Rise Time	t _r			10		
Turn-Off DelayTime	t _{d(off)}			25		
Turn-Off Fall Time	t _f			13		
Diode Forward Voltage Note 3	V _{SD}	I _S =-30A, V _{GS} =0V			-1.2	V

Notes:

1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board, t $\leq$ 10 sec.
3. Pulse Test: Pulse Width $\leq$ 300 μ s, Duty Cycle $\leq$ 2%.

P-Channel MOSFET

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■ Typical Characteristics

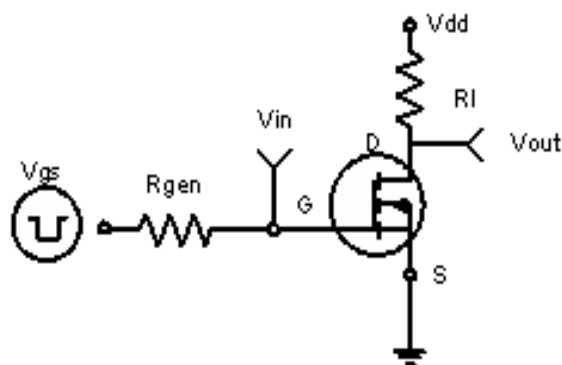


Figure 1: Switching Test Circuit

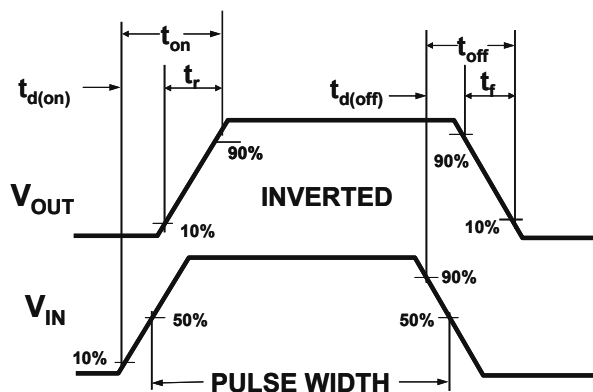


Figure 2: Switching Waveforms

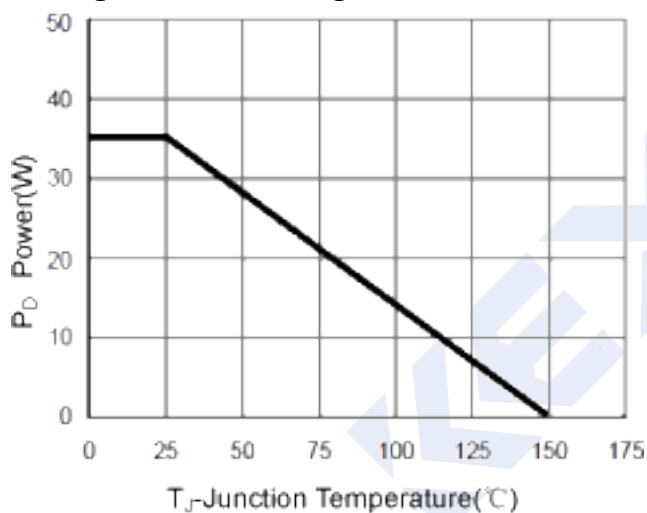


Figure 3 Power Dissipation

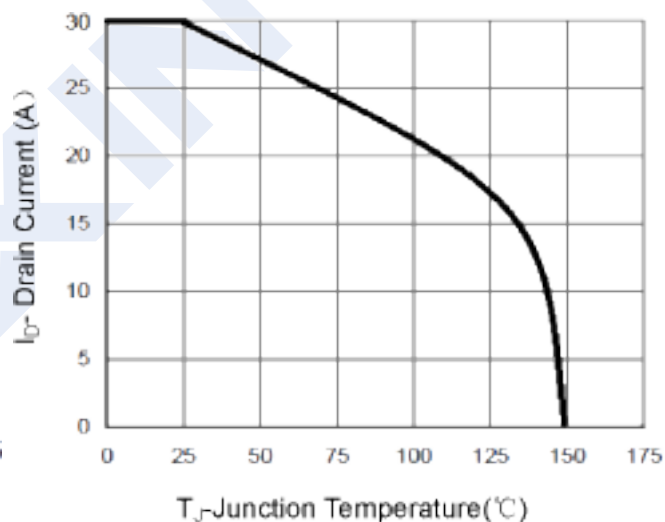


Figure 4 Drain Current

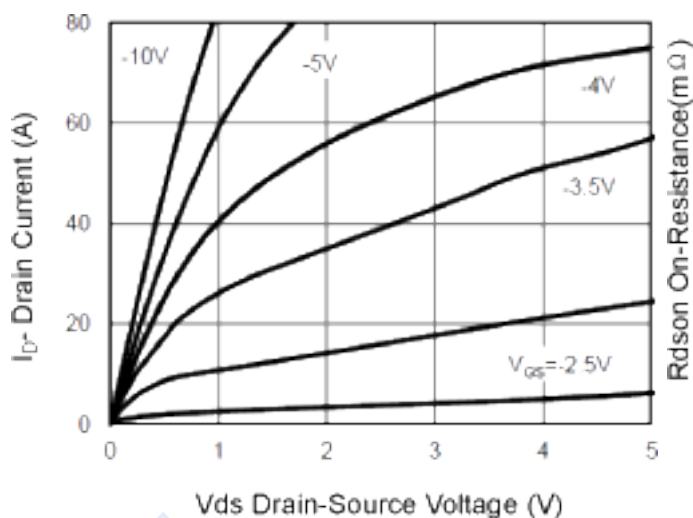


Figure 5 Output Characteristics

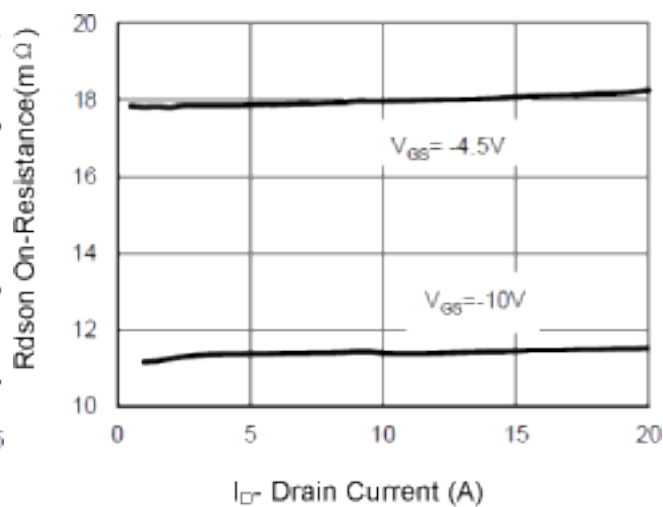


Figure 6 Drain-Source On-Resistance

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■ Typical Characteristics

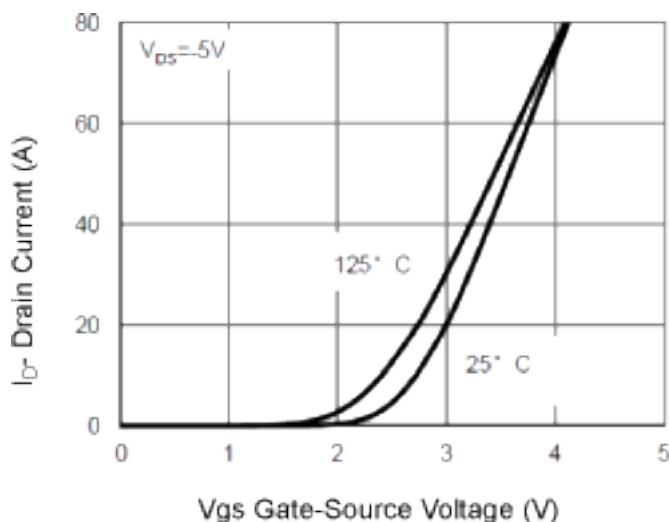


Figure 7 Transfer Characteristics

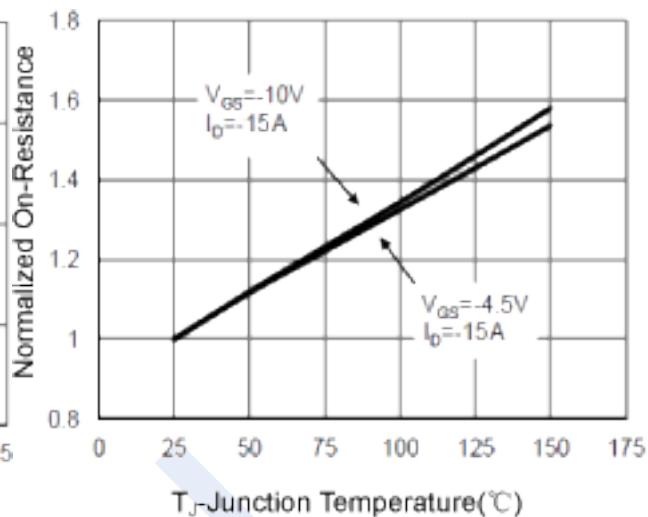


Figure 8 Drain-Source On-Resistance

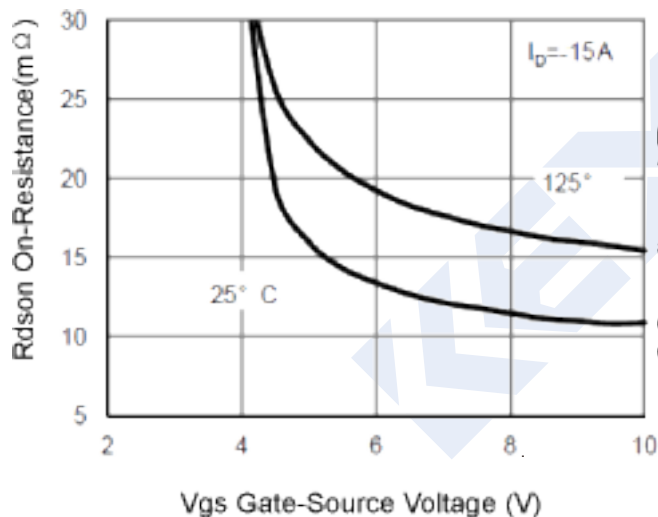


Figure 9 Rdson vs Vgs

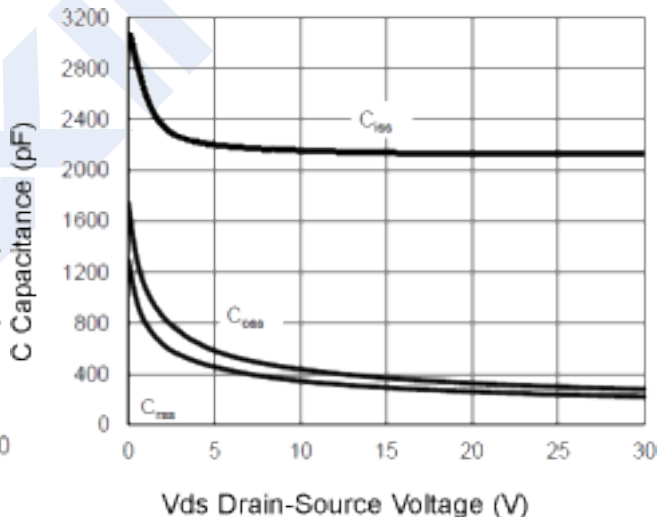


Figure 10 Capacitance vs Vds

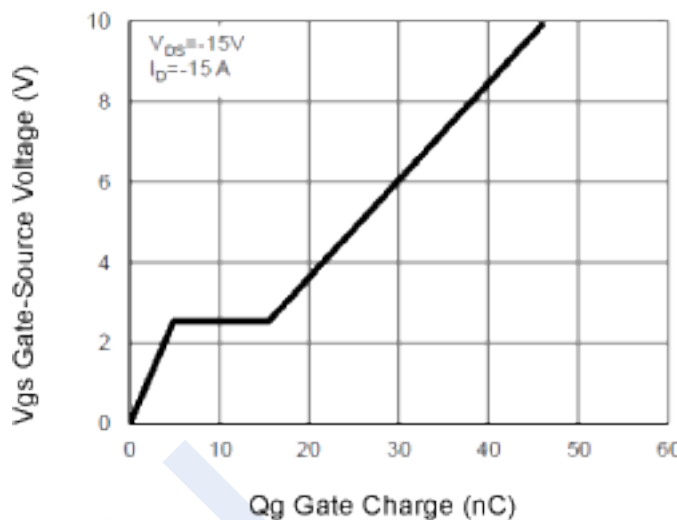


Figure 11 Gate Charge

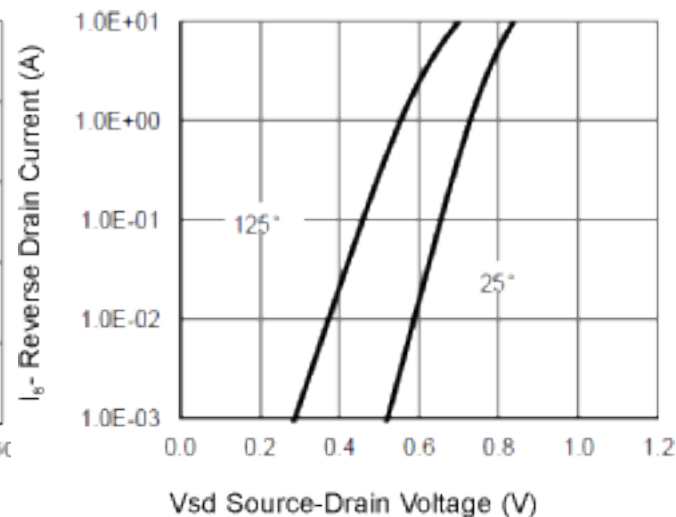


Figure 12 Source- Drain Diode Forward

P-Channel MOSFET

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■ Typical Characteristics

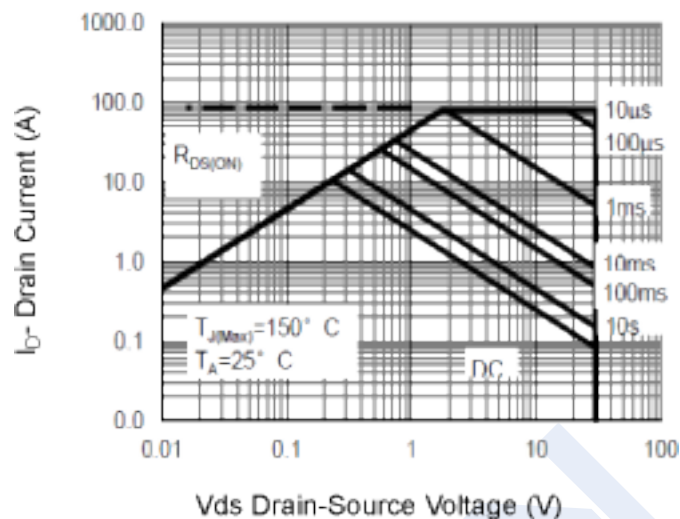


Figure 13 Safe Operation Area

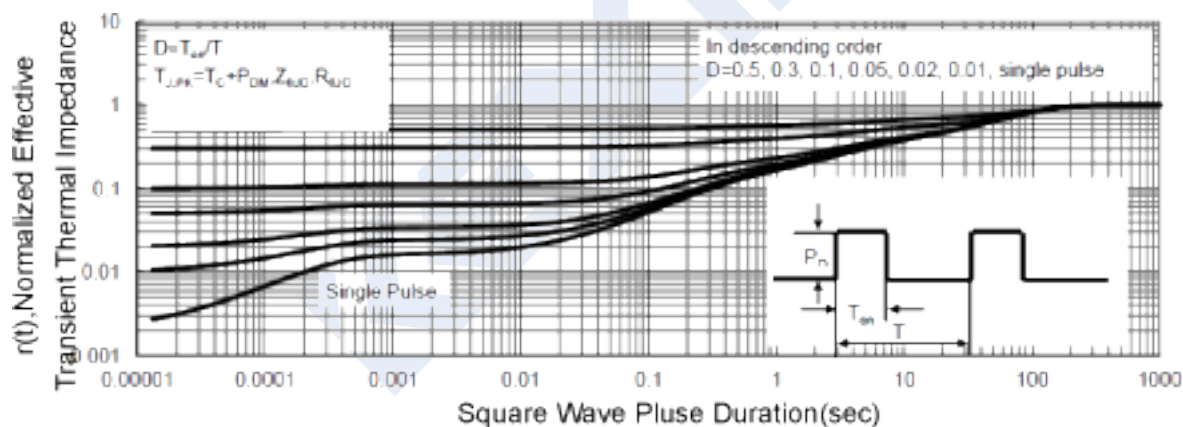
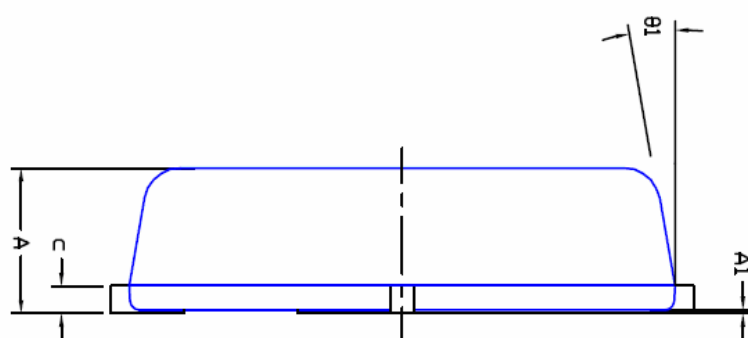
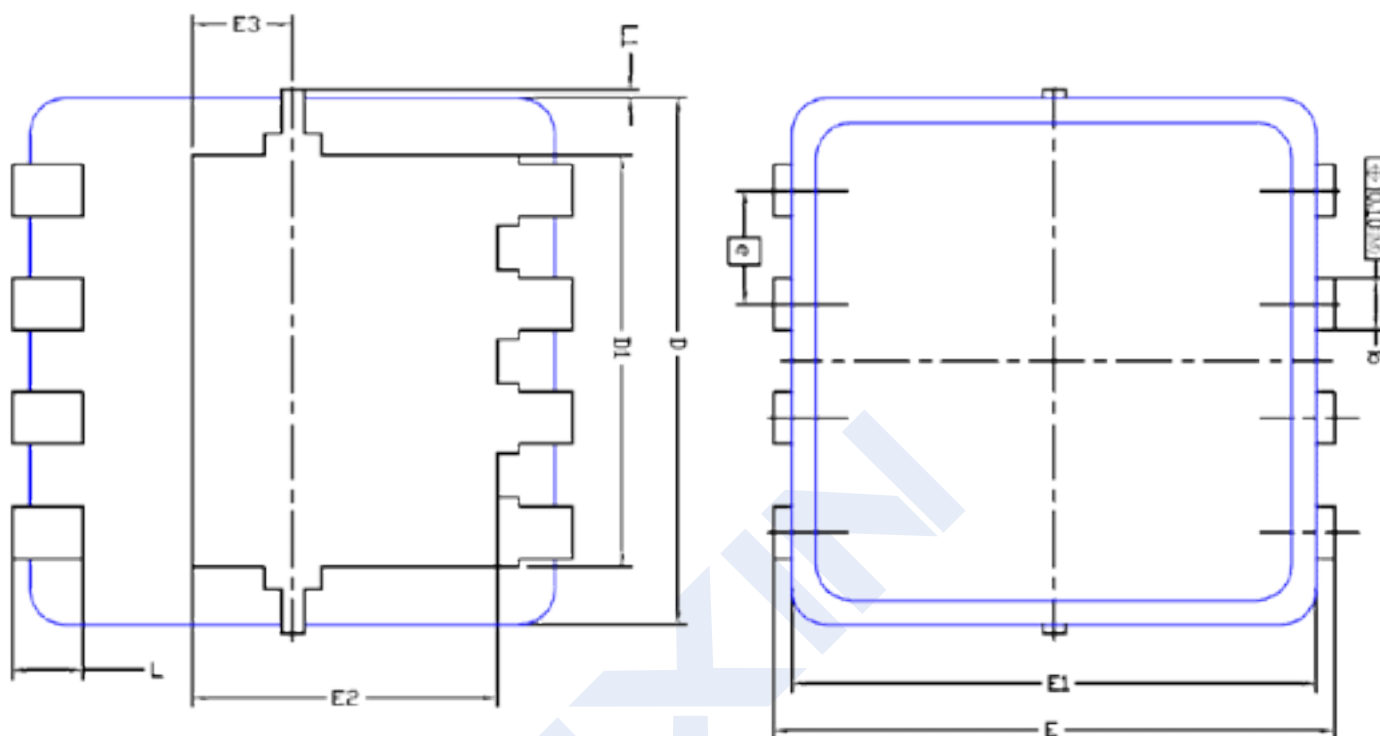


Figure 14 Normalized Maximum Transient Thermal Impedance

P-Channel MOSFET

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■ Typical Characteristics



DIM.	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.700	0.80	0.900	0.0276	0.0315	0.0354
A1	0.00	---	0.05	0.000	---	0.002
b	0.24	0.30	0.35	0.009	0.012	0.014
c	0.10	0.152	0.25	0.004	0.006	0.010
D	3.00 BSC			0.118 BSC		
D1	2.35 BSC			0.093 BSC		
E	3.20 BSC			0.126 BSC		
E1	3.00 BSC			0.118 BSC		
E2	1.75 BSC			0.069 BSC		
E3	0.575 BSC			0.023 BSC		
e	0.65 BSC			0.026 BSC		
L	0.30	0.40	0.50	0.0118	0.0157	0.0197
L1	0	---	0.100	0	---	0.004
e1	0°	10°	12°	0°	10°	12°