

PRODUCT CHARACTERISTICS

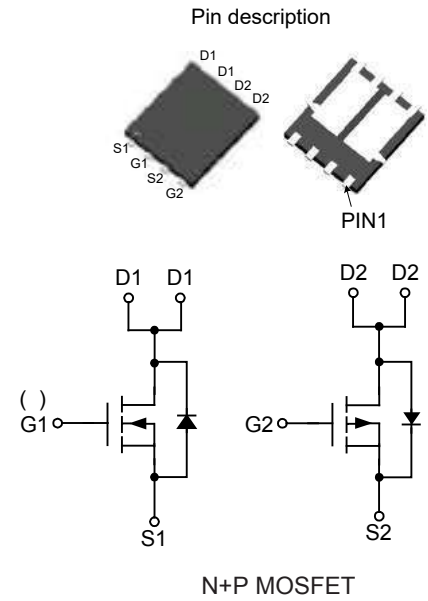
N-Channel	P-Channel
$BV_{DSS} = 30V$	$BV_{DSS} = -30V$
$R_{DS(on)} (@V_{GS} = 10V) < 14m\Omega$	$R_{DS(on)} (@V_{GS} = -10V) < 20m\Omega$
$R_{DS(on)} (@V_{GS} = 4.5V) < 18m\Omega$	$R_{DS(on)} (@V_{GS} = -4.5V) < 25m\Omega$

FEATURES

- Battery switch
- Load switch
- Fully characterized avalanche voltage and current
- Good stability and uniformity with high E_{AS}
- Excellent package for good heat dissipation
- Special process technology for high ESD capability

APPLICATIONS

- SMPS and general purpose applications
- Hard switched and high frequency circuits
- Uninterruptible Power Supply



ORDER INFORMATION

Order codes		Package	Packing
Halogen-Free	Halogen		
N/A	MOT3617G	PDFN5X6	5000 pieces /Reel

ABSOLUTE MAXIMUM RATINGS ($T_C = 25^\circ C$, unless otherwise specified)

Parameter	Symbol	Limit		Unit
		N-MOSFET	P-MOSFET	
Drain-source voltage	V_{DS}	30	-30	V
Gate-source voltage	V_{GS}	± 20	± 20	V
Continuous drain current	I_D	30	-20	A
Pulsed drain current	I_{DM}	100	-80	A
Single pulsed avalanche energy	E_{AS}	80	45	mJ
Thermal resistance from junction to case	R_{JC}	4.17	5.0	$^\circ C/W$
Power dissipation	P_D	30	25	W
Operating junction and storage temperature range	T_J, T_{STG}	-55~+150		$^\circ C$

■ N-Channel Electrical Characteristics (T_c=25°C unless otherwise specified)

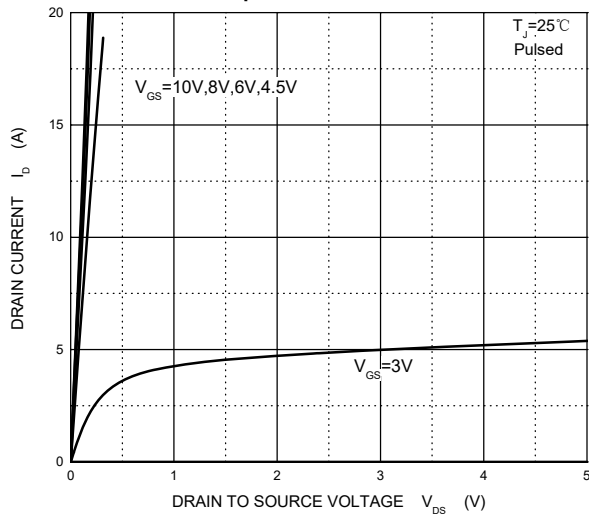
Parameter	Symbol	Test condition	min	typ	Max	Unit
Off characteristics						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} =0V, I _D =250uA	30	-	-	V
Zero gate voltage drain current	I _{DSS}	V _{GS} =24V, V _{GS} =0V	-	-	1.0	uA
		T _J =125°C	-	-	100	uA
Gate-body leakage current	I _{GSS}	V _{DS} =0V, V _{GS} =±20V	-	-	±100	nA
On characteristics						
Gate-threshold voltage	V _{GS(th)}	V _{DS} = V _{GS} ,I _D =250uA	1.0	1.65	2.5	V
Static drain-source on-sate resistance	R _{DS(ON)}	V _{GS} = 10V ,I _D =8A	-	10	14	mΩ
		V _{GS} = 4.5V ,I _D =6A	-	15	18	mΩ
Dynamic characteristics						
Input capacitance	C _{ISS}	V _{DS} = 15V, V _{GS} =0V f=1MHz	-	1000	-	pF
Output capacitance	C _{OSS}		-	143	-	pF
Reverse transfer capacitance	C _{rSS}		-	130	-	pF
Gate resistance	R _g	f=1MHz	-	6.0	-	Ω
Switching characteristics						
Total gate charge	Q _g	V _{GS} =10V, V _{DS} =15V I _D =8A	-	22	-	nC
Gate-source charge	Q _{gs}		-	2.8	-	nC
Gate-drain charge	Q _{gd}		-	5.2	-	nC
Turn-on delay time	td _(on)	V _{DD} =15V, R _L =5Ω V _{GS} =10V, R _{GEN} =10Ω	-	25	-	nS
Turn-on rise time	tr		-	40	-	nS
Turn-off delay time	td _(off)		-	140	-	nS
Turn-off fall time	tf		-	80	-	nS
Drain-source diode characteristics						
Drain-source diode forward voltage	V _{SD}	V _{GS} =0V, I _S =8A	-	-	1.2	V
Continuos drain-source diode forward current	I _S		-	-	30	A
Pulsed drain-source diode forward current	I _{SM}		-	-	100	A

■ P-Channel Electrical Characteristics (T_C=25°C unless otherwise specified)

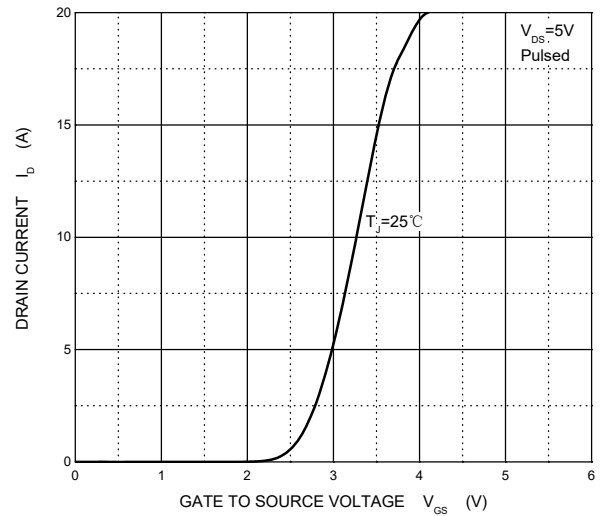
Parameter	Symbol	Test condition	min	typ	Max	Unit
Off characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=-250\mu A$	30	-	-	V
Zero gate voltage drain current	I_{DSS}	$V_{GS}=-24V, V_{GS}=0V$	-	-	-1.0	μA
		$T_J=125^{\circ}C$	-	-	-100	μA
Gate-body leakage current	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 20V$	-	-	± 100	nA
On characteristics						
Gate-threshold voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-1.0	-1.5	-2.5	V
Static drain-source on-sate resistance	$R_{DS(ON)}$	$V_{GS}=-10V, I_D=-8A$	-	16	20	m Ω
		$V_{GS}=-4.5V, I_D=-6A$	-	22	25	m Ω
Dynamic characteristics						
Input capacitance	C_{ISS}	$V_{DS}=-15V, V_{GS}=0V$ $f=1MHz$	-	943	-	pF
Output capacitance	C_{OSS}		-	107	-	pF
Reverse transfer capacitance	C_{RSS}		-	90	-	pF
Gate resistance	R_g	$f=1MHz$	-	22	-	Ω
Switching characteristics						
Total gate charge	Q_g	$V_{GS}=-10V, V_{DS}=-15V$ $I_D=-8A$	-	28	-	nC
Gate-source charge	Q_{gs}		-	3.2	-	nC
Gate-drain charge	Q_{gd}		-	8.5	-	nC
Turn-on delay time	$td_{(on)}$	$V_{DD}=-15V, R_L=5\Omega$ $V_{GS}=-10V, R_{GEN}=10\Omega$	-	32	-	nS
Turn-on rise time	tr		-	55	-	nS
Turn-off delay time	$td_{(off)}$		-	150	-	nS
Turn-off fall time	tf		-	60	-	nS
Drain-source diode characteristics						
Drain-source diode forward voltage	V_{SD}	$V_{GS}=0V, I_S=-5A$	-	-	-1.2	V
Continuos drain-source diode forward current	I_S		-	-	-20	A
Pulsed drain-source diode forward current	I_{SM}		-	-	-80	A

■ N-Channel MOS

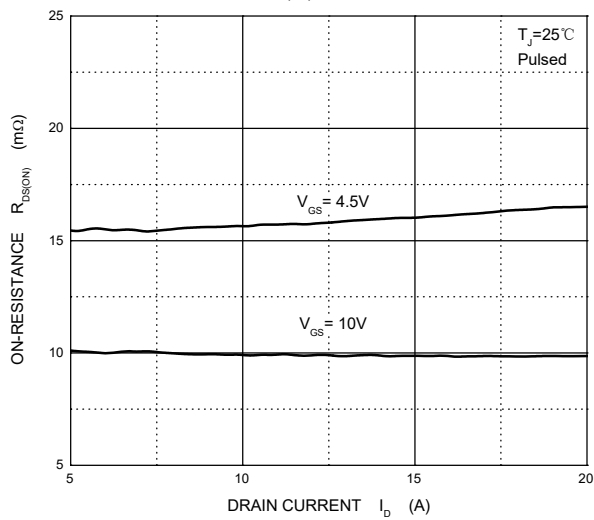
Output Characteristics



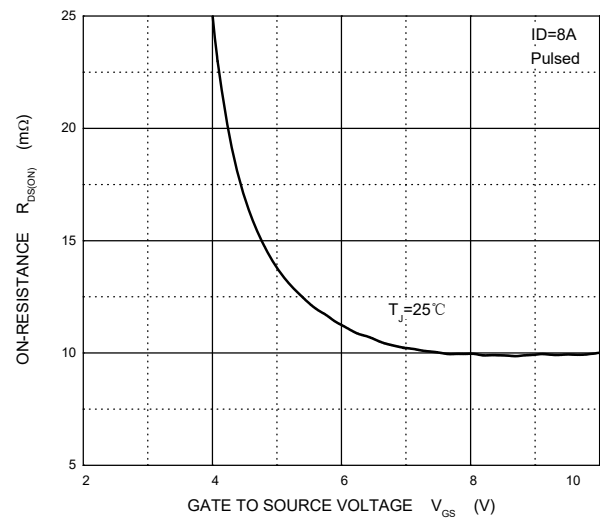
Transfer Characteristics



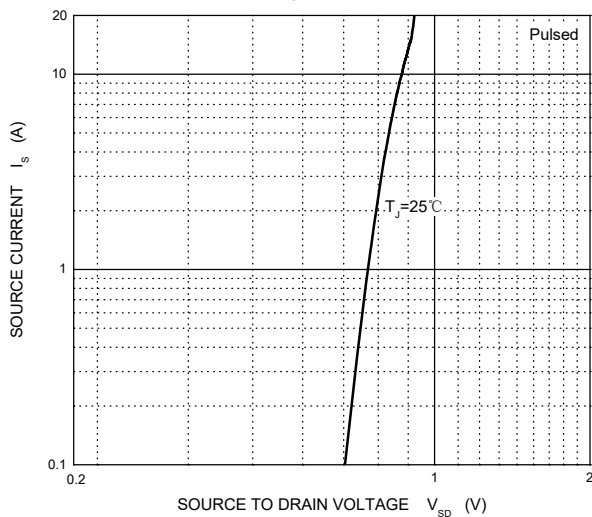
$R_{DS(ON)}$ — I_D



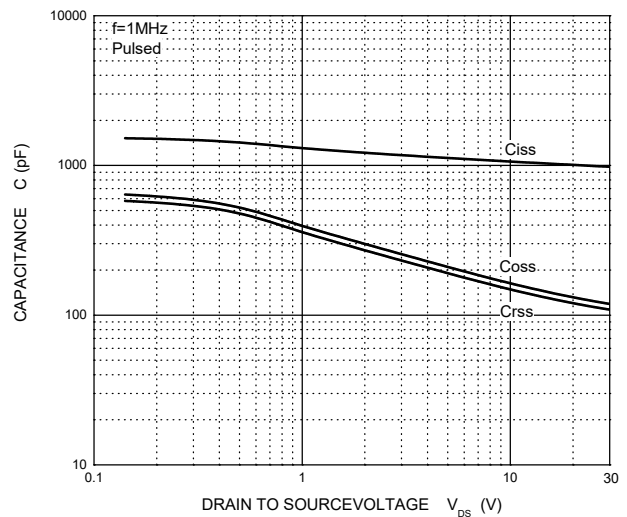
$R_{DS(ON)}$ — V_{GS}



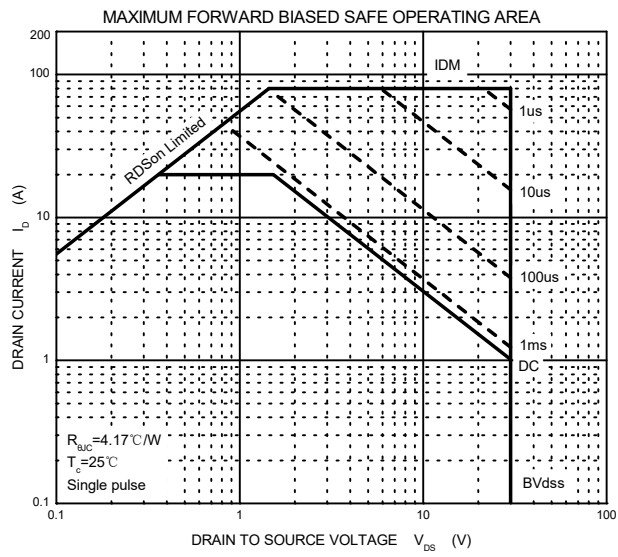
I_S — V_{SD}



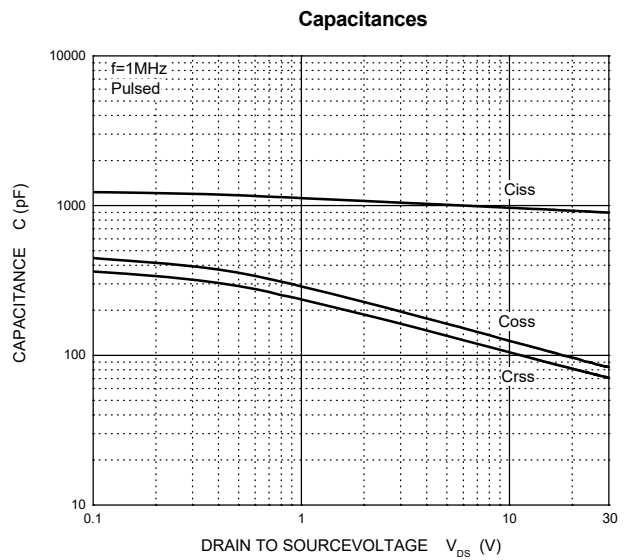
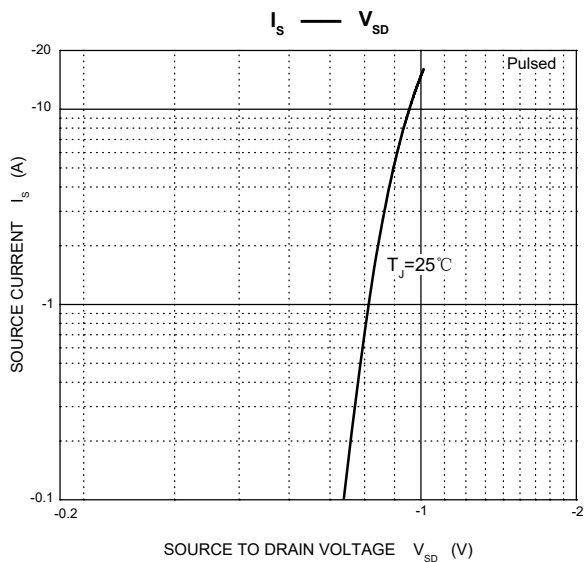
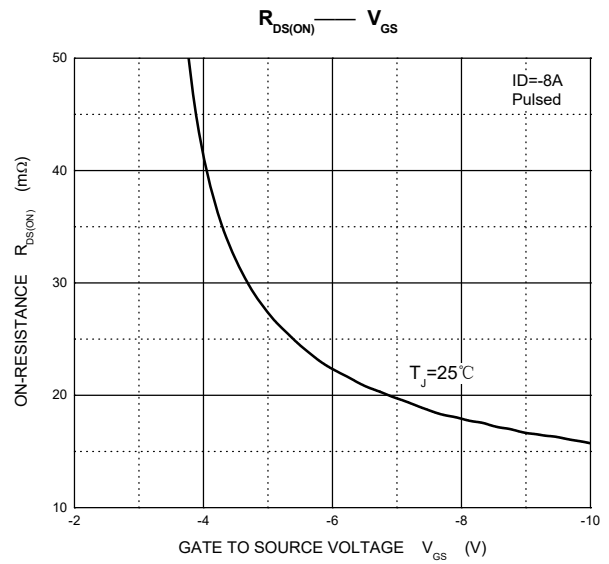
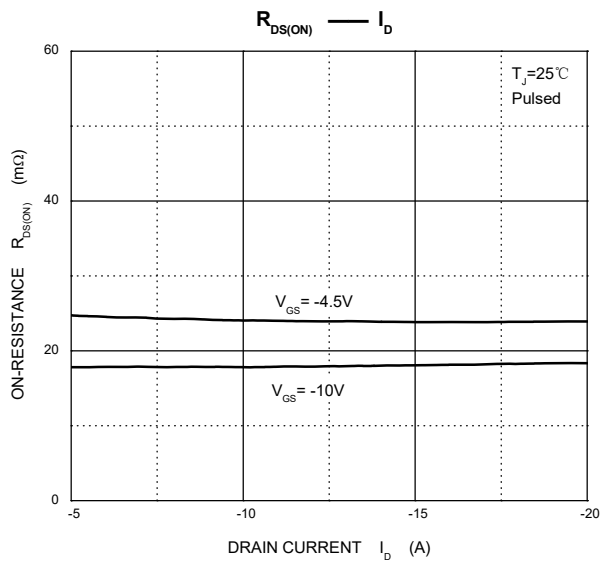
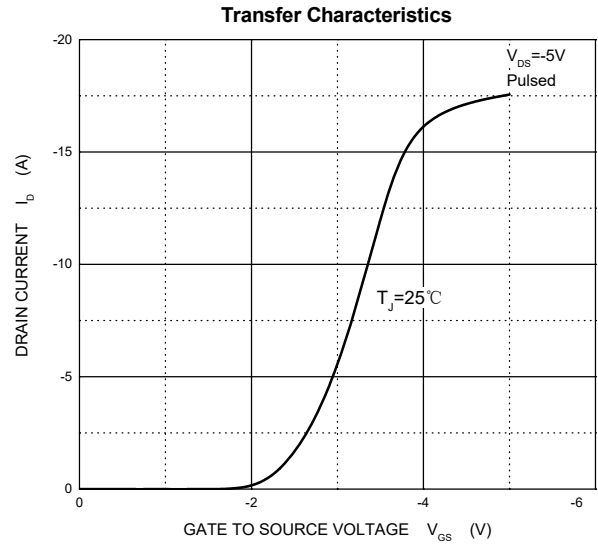
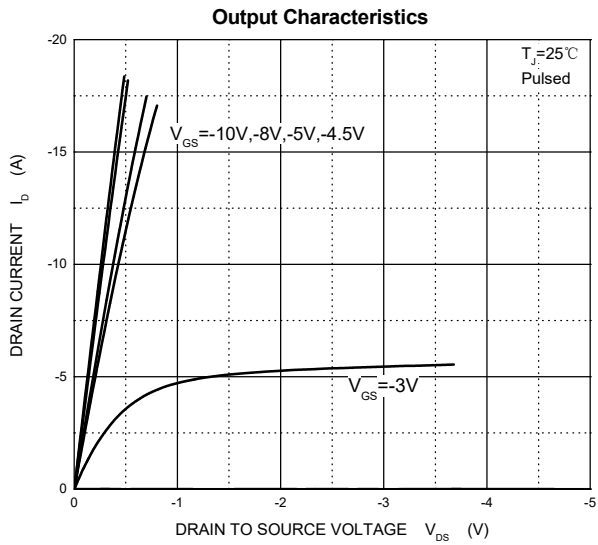
Capacitances



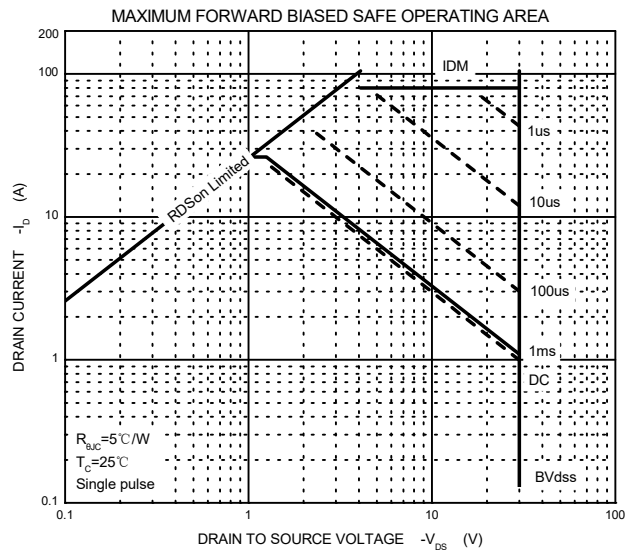
■ N-Channel MOS



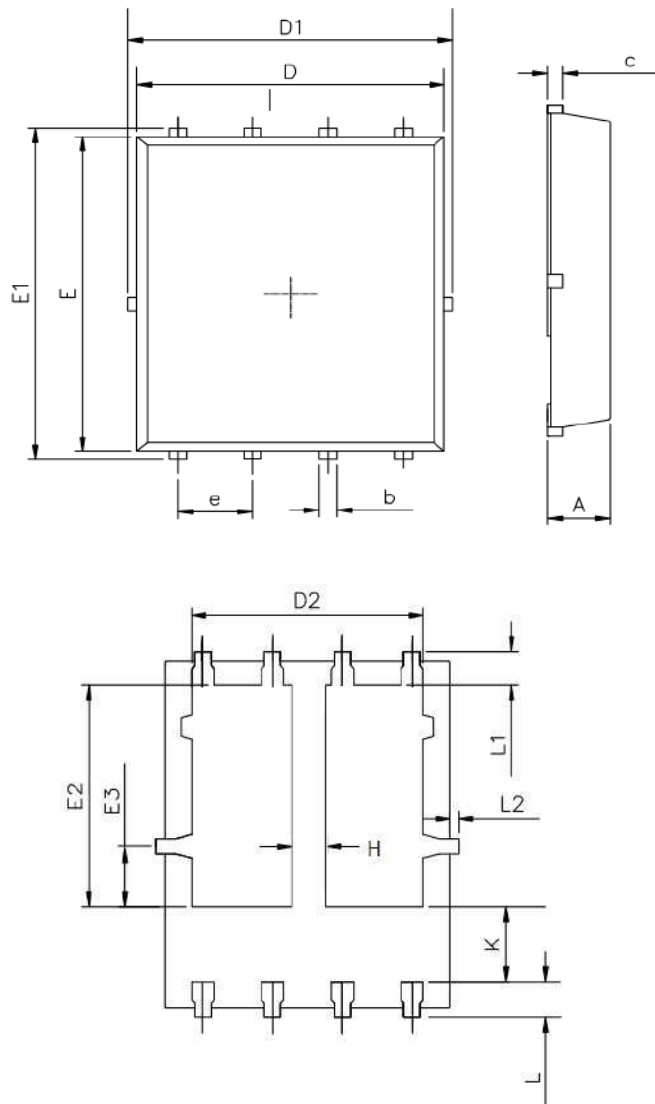
■ P-Channel MOS



■ P-Channel MOS



■ PDFN5X6-8L Package Mechanical Data



UNIT:mm

	MIN	NOM	MAX
A	0.90	1.00	1.10
b	0.25	0.35	0.50
c	0.10	0.20	0.30
D	4.80	5.00	5.30
D1	4.90	5.10	5.50
D2	3.92	4.02	4.20
E	5.65	5.75	5.85
E1	5.90	6.05	6.20
E2	3.325	3.525	3.775
E3	0.80	0.90	1.00
e		1.27	
L	0.40	0.55	0.70
L1		0.65	
L2	0.00		0.15
K	1.00	1.30	1.50
H	0.5	0.6	0.7