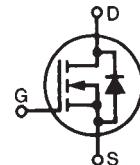


PolarHV™ Power MOSFET

N-Channel Enhancement Mode
Fast Recovery Diode
Avalanche Rated

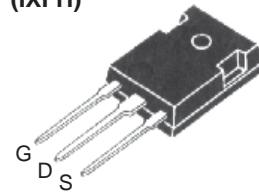
IXFH26N60P
IXFT26N60P
IXFV26N60P
IXFV26N60PS

V_{DSS} = 600 V
 I_{D25} = 26 A
 $R_{DS(on)}$ ≤ 270 mΩ
 t_{rr} ≤ 200 ns

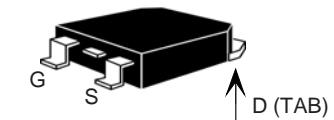


Symbol	Test Conditions	Maximum Ratings		
V_{DSS}	$T_J = 25^\circ\text{C}$ to 150°C	600	V	
V_{DGR}	$T_J = 25^\circ\text{C}$ to 150°C ; $R_{GS} = 1 \text{ M}\Omega$	600	V	
V_{GSS}	Continuous	±30	V	
V_{GSM}	Transient	±40	V	
I_{D25}	$T_c = 25^\circ\text{C}$	26	A	
I_{DM}	$T_c = 25^\circ\text{C}$, pulse width limited by T_{JM}	65	A	
I_{AR}	$T_c = 25^\circ\text{C}$	13	A	
E_{AR}	$T_c = 25^\circ\text{C}$	40	mJ	
E_{AS}	$T_c = 25^\circ\text{C}$	1.2	J	
dv/dt	$I_s \leq I_{DM}$, $di/dt \leq 100 \text{ A}/\mu\text{s}$, $V_{DD} \leq V_{DSS}$ $T_J \leq 150^\circ\text{C}$, $R_G = 5 \Omega$	10	V/ns	
P_D	$T_c = 25^\circ\text{C}$	460	W	
T_J		-55 ... +150	°C	
T_{JM}		150	°C	
T_{stg}		-55 ... +150	°C	
T_L	1.6 mm (0.062 in.) from case for 10 s	300	°C	
T_{SOLD}	Plastic body for 10 s	260	°C	
M_d	Mounting torque (TO-3P&TO-247)	1.13/10	Nm/lb.in.	
F_c	Mounting force (PLUS220)	11..65/2.5..15	N/lb	
Weight	TO-247 TO-268 PLUS220 & PLUS220SMD	6.0 5.0 4.0	g g g	

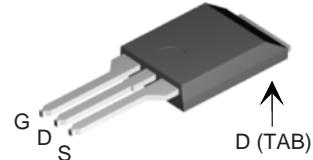
TO-247 (IXFH)



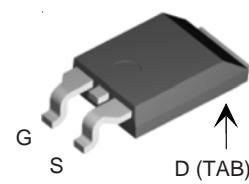
TO-268 (IXFT)



PLUS220 (IXFV)



PLUS220SMD (IXFV...S)



G = Gate
S = Source
TAB = Drain

Symbol	Test Conditions ($T_J = 25^\circ\text{C}$, unless otherwise specified)	Characteristic Values		
		Min.	Typ.	Max.
BV_{DSS}	$V_{GS} = 0 \text{ V}$, $I_D = 250 \mu\text{A}$	600		V
$V_{GS(th)}$	$V_{DS} = V_{GS}$, $I_D = 4 \text{ mA}$	2.5		5.0 V
I_{GSS}	$V_{GS} = \pm 30 \text{ V}$, $V_{DS} = 0 \text{ V}$		±100	nA
I_{DSS}	$V_{DS} = V_{DSS}$ $V_{GS} = 0 \text{ V}$		25 250	μA
$R_{DS(on)}$	$V_{GS} = 10 \text{ V}$, $I_D = 0.5 I_{D25}$ Pulse test, $t \leq 300 \mu\text{s}$, duty cycle $d \leq 2 \%$		270	mΩ

Features

- Fast Recovery diode
- Unclamped Inductive Switching (UIS) rated
- International standard packages
- Low package inductance
 - easy to drive and to protect

Advantages

- Easy to mount
- Space savings
- High power density

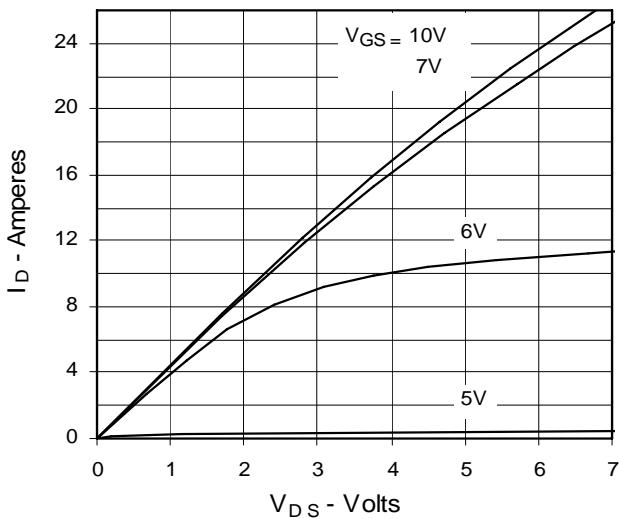
Symbol	Test Conditions	Characteristic Values		
		(T _J = 25°C, unless otherwise specified)	Min.	Typ.
g_{fs}	$V_{DS} = 20\text{ V}; I_D = 0.5 I_{D25}$, pulse test	16	26	S
C_{iss} C_{oss} C_{rss}	$V_{GS} = 0\text{ V}, V_{DS} = 25\text{ V}, f = 1\text{ MHz}$	4150		pF
		400		pF
		27		pF
$t_{d(on)}$ t_r $t_{d(off)}$ t_f	$V_{GS} = 10\text{ V}, V_{DS} = 0.5 I_{D25}$ $R_G = 5\Omega$ (External)	25		ns
		27		ns
		75		ns
		21		ns
$Q_{g(on)}$ Q_{gs} Q_{gd}	$V_{GS} = 10\text{ V}, V_{DS} = 0.5 V_{DSS}, I_D = 0.5 I_{D25}$	72		nC
		27		nC
		24		nC
R_{thJC}			0.27	°C/W
R_{thCs}	(PLUS220 & TO-247)	0.21		°C/W

Source-Drain Diode
Characteristic Values
 $(T_J = 25^\circ\text{C}, \text{unless otherwise specified})$

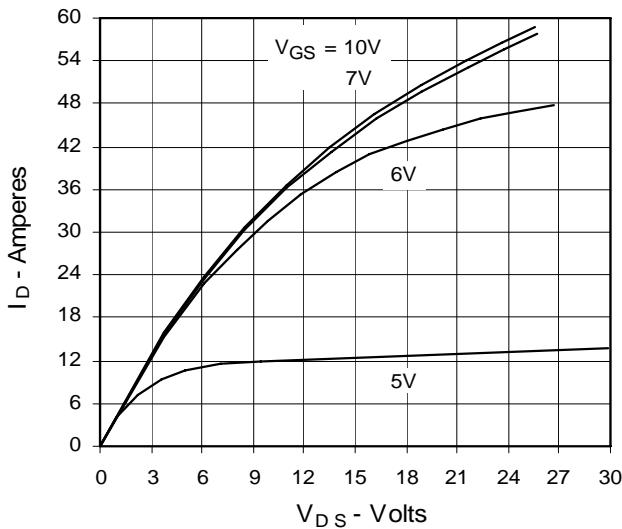
Symbol	Test Conditions	Characteristic Values			
		(T _J = 25°C, unless otherwise specified)	Min.	Typ.	Max.
I_s	$V_{GS} = 0\text{ V}$			26	A
I_{SM}	Repetitive			78	A
V_{SD}	$I_F = I_s, V_{GS} = 0\text{ V}$, pulse test			1.5	V
t_{rr} I_{RM} Q_{RM}	$I_F = 25\text{ A}, -di/dt = 100\text{ A}/\mu\text{s}$ $V_R = 100\text{ V}; V_{GS} = 0\text{ V}$	150	200	ns	
		7		A	
		0.7		μC	

Characteristic Curves
Fig. 1. Output Characteristics

@ 25°C


Fig. 2. Extended Output Characteristics

@ 25°C



IXYS reserves the right to change limits, test conditions, and dimensions.

IXYS MOSFETs and IGBTs are covered by 4,835,592 4,931,844 5,049,961 5,237,481 6,162,665 6,404,065 B1 6,683,344 6,727,585
one or more of the following U.S. patents: 4,850,072 5,017,508 5,063,307 5,381,025 6,259,123 B1 6,534,343 6,710,405 B2 6,759,692
4,881,106 5,034,796 5,187,117 5,486,715 6,306,728 B1 6,583,505 6,710,463 6,771,478 B2

**Fig. 3. Output Characteristics
@ 125°C**

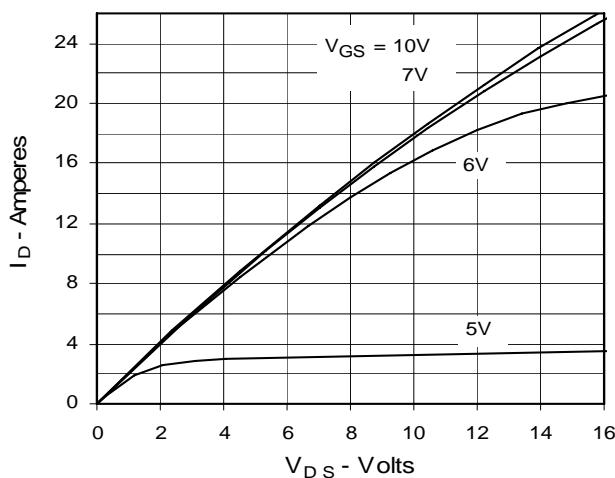


Fig. 4. $R_{DS(on)}$ Normalized to 0.5 I_{D25} Value vs. Junction Temperature

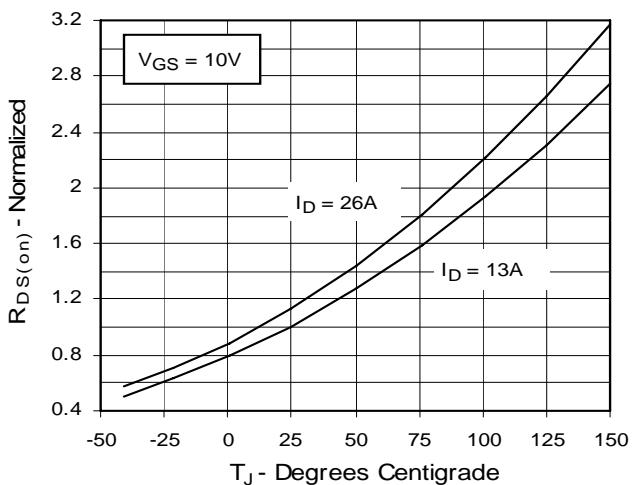


Fig. 5. $R_{DS(on)}$ Normalized to 0.5 I_{D25} Value vs. I_D

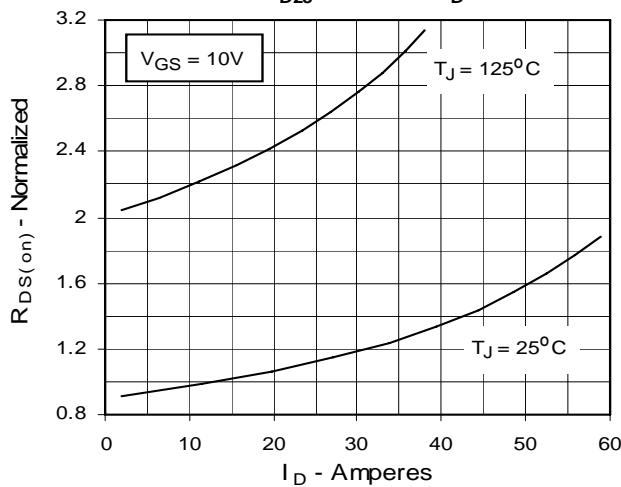


Fig. 6. Drain Current vs. Case Temperature

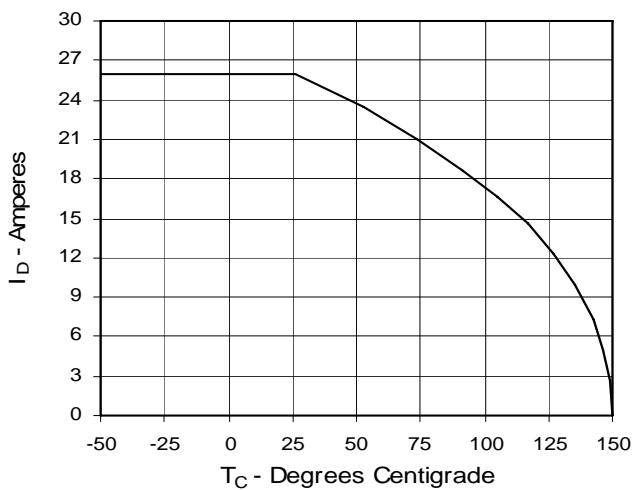


Fig. 7. Input Admittance

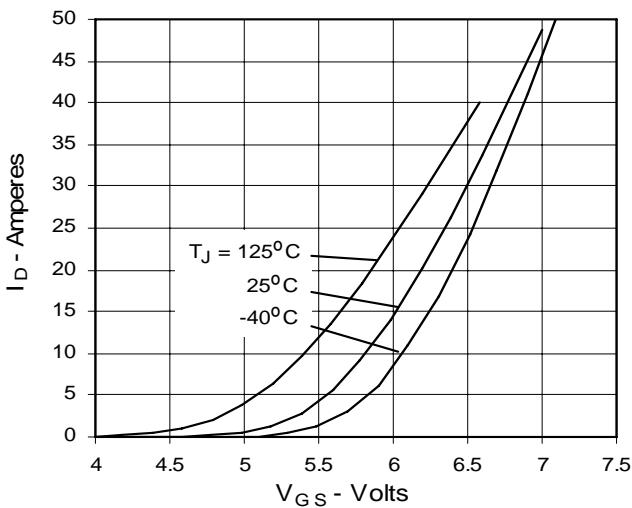
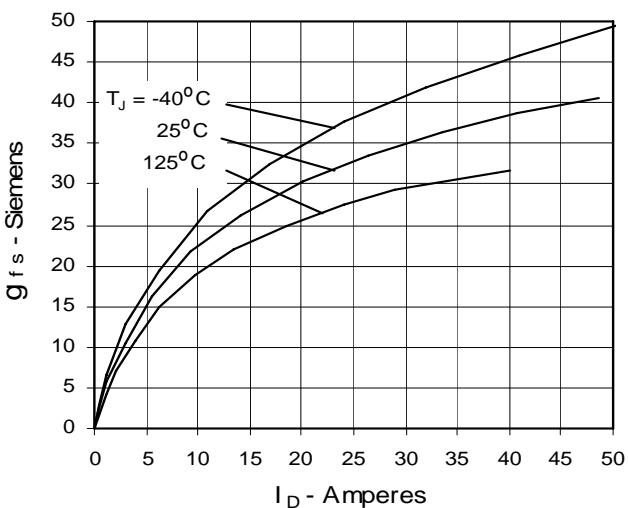


Fig. 8. Transconductance



**Fig. 9. Source Current vs.
Source-To-Drain Voltage**

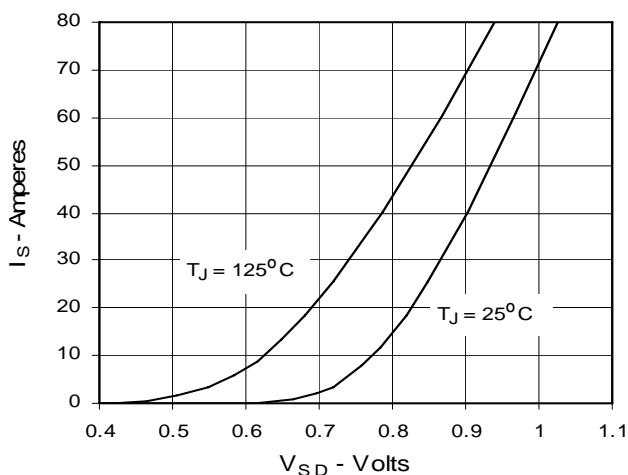


Fig. 10. Gate Charge

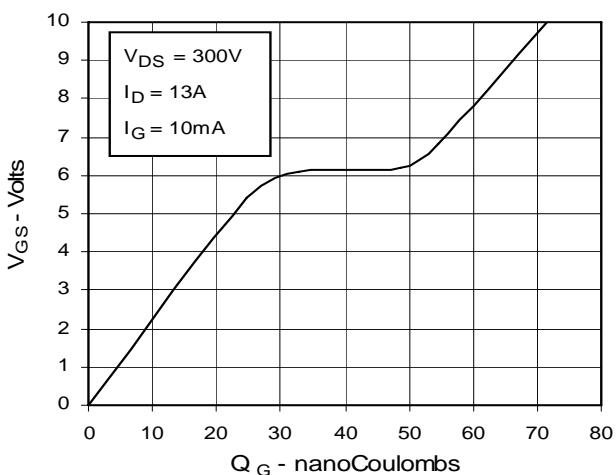


Fig. 11. Capacitance

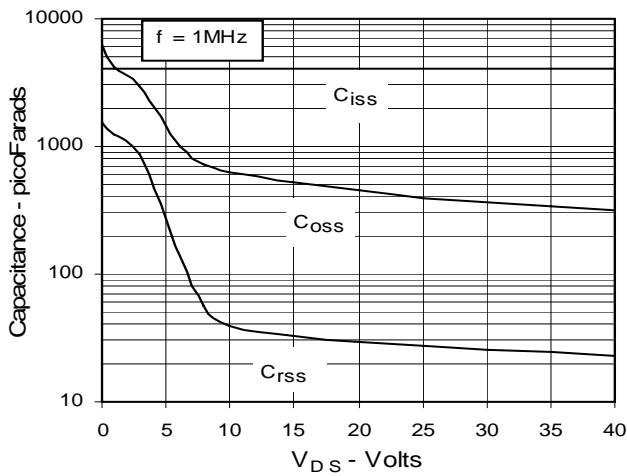
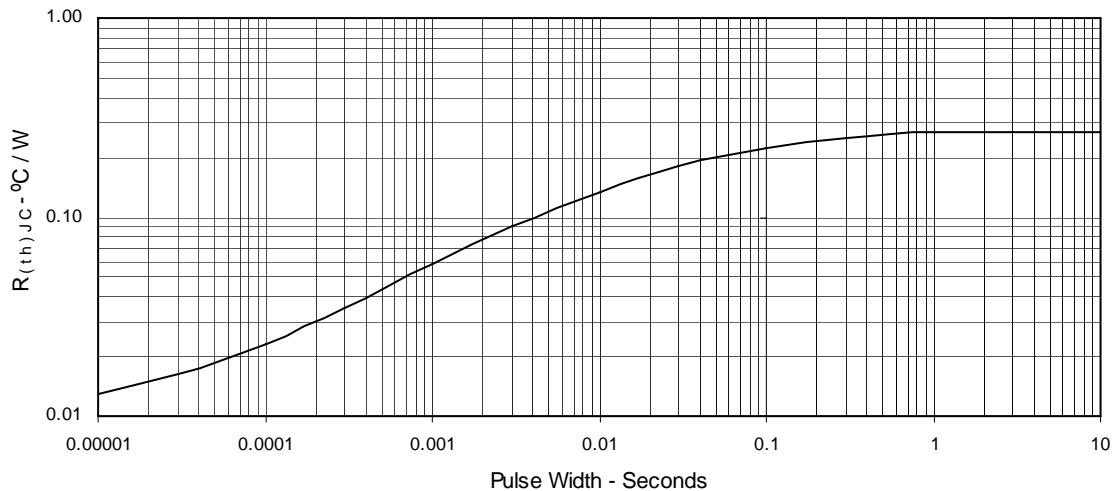
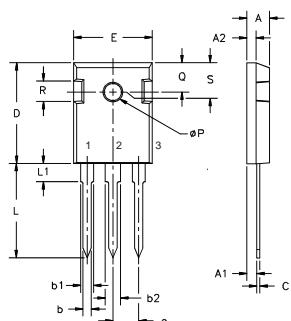
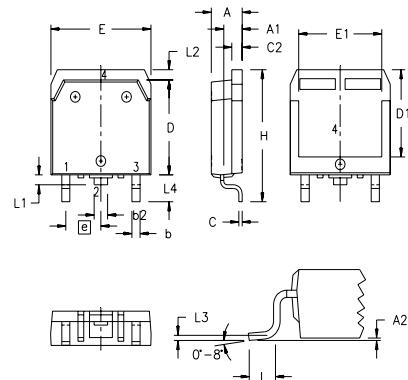


Fig. 12. Maximum Transient Thermal Resistance

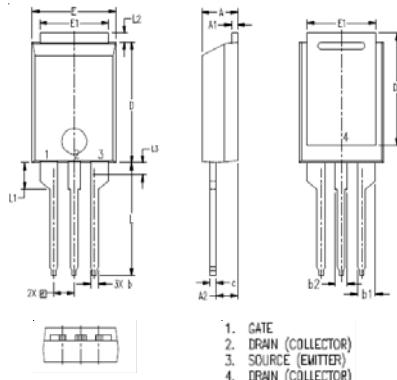


TO-247 AD (IXFH) Outline


Dim.	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	4.7	5.3	.185	.209
A ₁	2.2	2.54	.087	.102
A ₂	2.2	2.6	.059	.098
b	1.0	1.4	.040	.055
b ₁	1.65	2.13	.065	.084
b ₂	2.87	3.12	.113	.123
C	.4	.8	.016	.031
D	20.80	21.46	.819	.845
E	15.75	16.26	.610	.640
e	5.20	5.72	0.205	0.225
L	19.81	20.32	.780	.800
L ₁		4.50		.177
ØP	3.55	3.65	.140	.144
Q	5.89	6.40	0.232	0.252
R	4.32	5.49	.170	.216
S	6.15	BSC	242	BSC

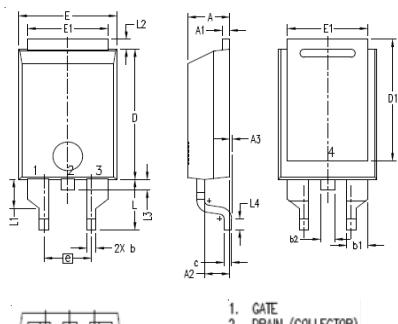
TO-268 (IXFT) Outline


SYM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	.193	.201	4.90	5.10
A ₁	.106	.114	2.70	2.90
A ₂	.001	.010	0.02	0.25
b	.045	.057	1.15	1.45
b ₂	.075	.083	1.90	2.10
C	.016	.026	0.40	0.65
C ₂	.057	.063	1.45	1.60
D	.543	.551	13.80	14.00
D ₁	.488	.500	12.40	12.70
E	.624	.632	15.85	16.05
E ₁	.524	.535	13.30	13.60
e	.215	BSC	5.45	BSC
H	.736	.752	18.70	19.10
L	.094	.106	2.40	2.70
L ₁	.047	.055	1.20	1.40
L ₂	.039	.045	1.00	1.15
L ₃	.010	BSC	0.25	BSC
L ₄	.150	.161	3.80	4.10

PLUS220 (IXFV) Outline


1. GATE
2. DRAIN (COLLECTOR)
3. SOURCE (EMITTER)
4. DRAIN (COLLECTOR)

SYM	INCHES		MILLIMETER	
	MIN	MAX	MIN	MAX
A	.169	.185	4.30	4.70
A ₁	.028	.035	0.70	0.90
A ₂	.098	.118	2.50	3.00
b	.035	.047	0.90	1.20
b ₁	.080	.095	2.03	2.41
b ₂	.054	.064	1.37	1.63
c	.028	.035	0.70	0.90
D	.551	.591	14.00	15.00
D ₁	.512	.539	13.00	13.70
E	.394	.433	10.00	11.00
E ₁	.331	.346	8.40	8.80
e	.100	BSC	2.54	BSC
L	.512	.551	13.00	14.00
L ₁	.118	.138	3.00	3.50
L ₂	.035	.051	0.90	1.30
L ₃	.047	.059	1.20	1.50

PLUS220SMD (IXFV_S) Outline


1. GATE
2. DRAIN (COLLECTOR)
3. SOURCE (EMITTER)
4. DRAIN (COLLECTOR)

SYM	INCHES		MILLIMETER	
	MIN	MAX	MIN	MAX
A	.169	.185	4.30	4.70
A ₁	.028	.035	0.70	0.90
A ₂	.098	.118	2.50	3.00
A ₃	.000	.010	0.00	0.25
b	.035	.047	0.90	1.20
b ₁	.080	.095	2.03	2.41
b ₂	.054	.064	1.37	1.63
c	.028	.035	0.70	0.90
D	.551	.591	14.00	15.00
D ₁	.512	.539	13.00	13.70
E	.394	.433	10.00	11.00
E ₁	.331	.346	8.40	8.80
e	.200	BSC	5.08	BSC
L	.209	.228	5.30	5.80
L ₁	.118	.138	3.00	3.50
L ₂	.035	.051	0.90	1.30
L ₃	.047	.059	1.20	1.50
L ₄	.039	.059	1.00	1.50