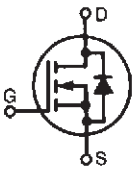
IXYS

PolarHV™ Power MOSFET

N-Channel Enhancement Mode
Fast Recovery Diode
Avalanche Rated

IXFH26N60P
IXFT26N60P
IXFV26N60P
IXFV26N60PS

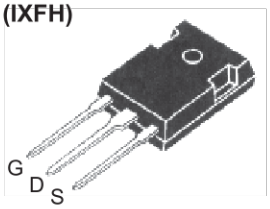
V_{DSS} = 600 V
I_{D25} = 26 A
$R_{DS(on)}$ ≤ 270 mΩ
t_{rr} ≤ 200 ns



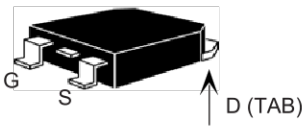
Symbol	Test Conditions	Maximum Ratings	
V_{DSS}	T_J = 25°C to 150°C	600	V
V_{DGR}	T_J = 25°C to 150°C; R_{GS} = 1 MΩ	600	V
V_{GSS}	Continuous	±30	V
V_{GSM}	Transient	±40	V
I_{D25}	T_C = 25°C	26	A
I_{DM}	T_C = 25°C, pulse width limited by T_{JM}	65	A
I_{AR}	T_C = 25°C	13	A
E_{AR}	T_C = 25°C	40	mJ
E_{AS}	T_C = 25°C	1.2	J
dv/dt	$I_S \le I_{DM}$, di/dt ≤ 100 A/μs, $V_{DD} \le V_{DSS}$ $T_J \le 150°C$, R_G = 5 Ω	10	V/ns
P_D	T_C = 25°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	6.0	g
	TO-268	5.0	g
	PLUS220 & PLUS220SMD	4.0	g

Symbol	Test Conditions (T_J = 25°C, unless otherwise specified)	Characteristic Values Min.	Typ.	Max.	
BV_{DSS}	V_{GS} = 0 V, I_D = 250 μA	600			V
$V_{GS(th)}$	$V_{DS} = V_{GS}$, I_D = 4 mA	2.5		5.0	V
I_{GSS}	V_{GS} = ±30 V, V_{DS} = 0 V			±100	nA
I_{DSS}	$V_{DS} = V_{DSS}$ V_{GS} = 0 V			25	μA
	T_J = 125°C			250	μA
$R_{DS(on)}$	V_{GS} = 10 V, $I_D = 0.5\ I_{D25}$ Pulse test, t ≤ 300 μs, duty cycle d ≤ 2 %			270	mΩ

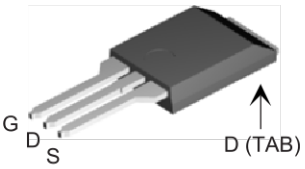
TO-247 (IXFH)



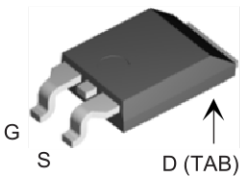
TO-268 (IXFT)



PLUS220 (IXFV)



PLUS220SMD (IXFV...S)



G = Gate D = Drain
S = Source TAB = Drain

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

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

Source-Drain Diode

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

Characteristic Curves

Fig. 1. Output Characteristics @ 25°C

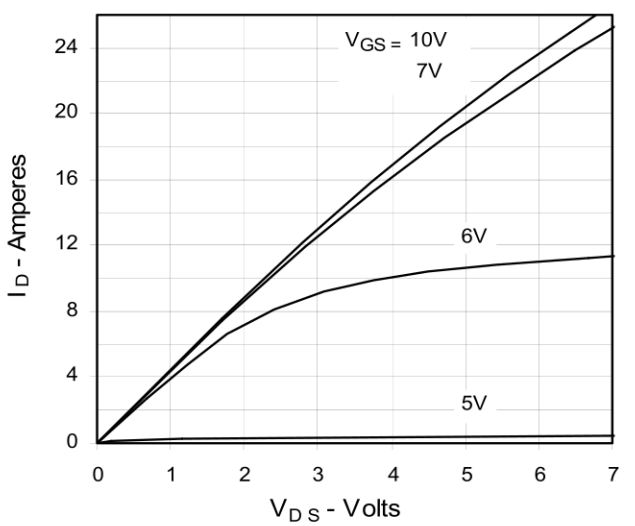
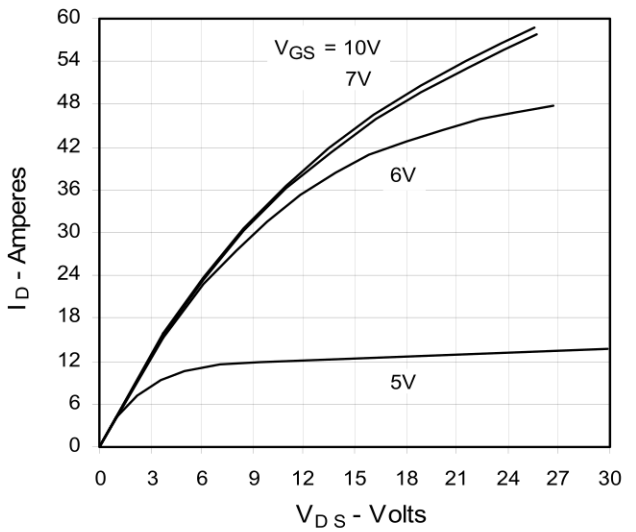


Fig. 2. Extended Output Characteristics @ 25°C



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

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

Fig. 3. Output Characteristics @ 125°C

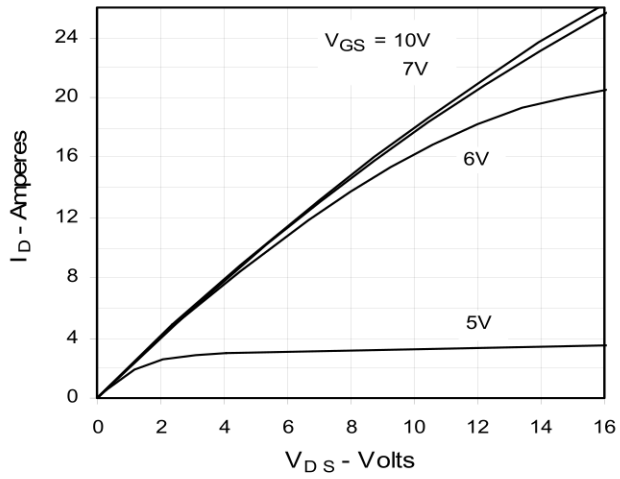


Fig. 4. $R_{DS(on)}$ Normalized to 0.5 I_{D25} Value vs. Junction Temperature

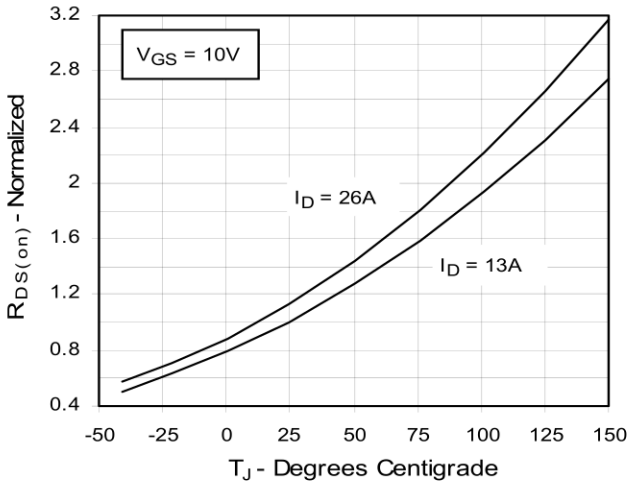


Fig. 5. $R_{DS(on)}$ Normalized to 0.5 I_{D25} Value vs. I_D

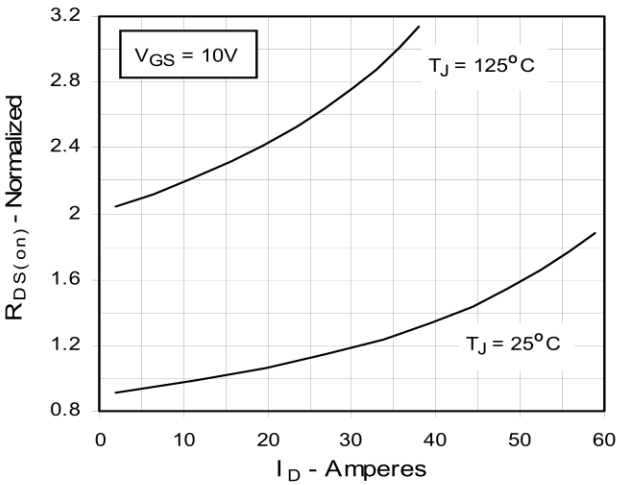


Fig. 6. Drain Current vs. Case Temperature

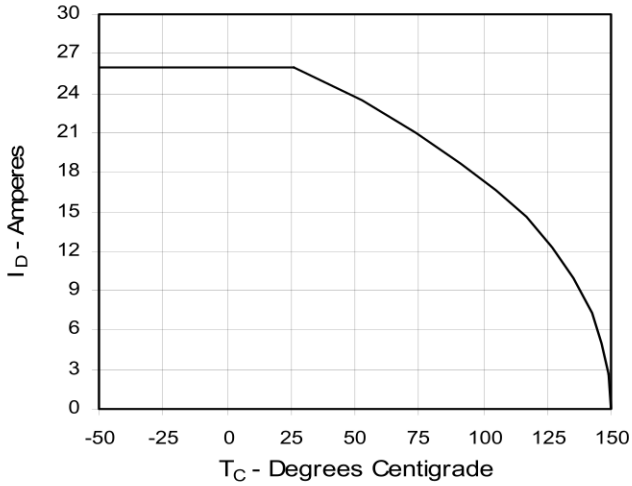


Fig. 7. Input Admittance

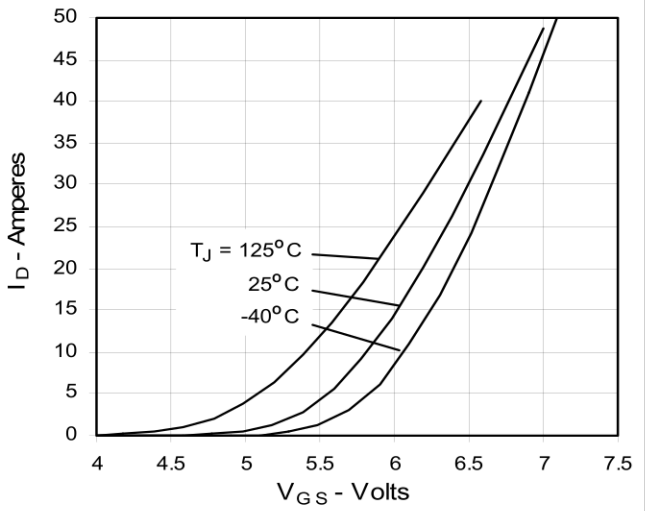


Fig. 8. Transconductance

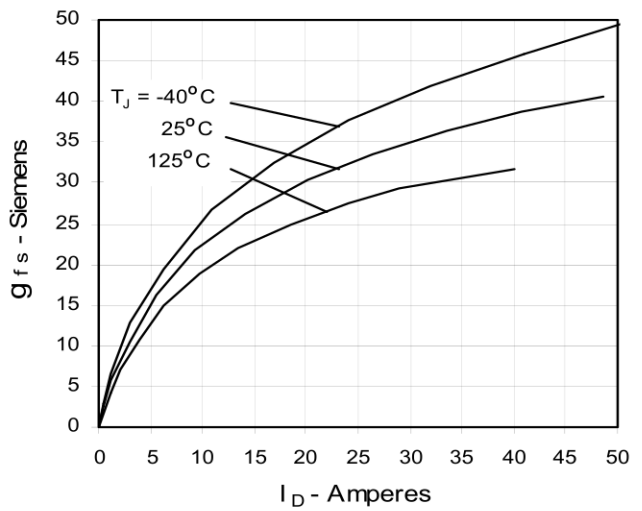


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Fig. 9. Source Current vs. Source-To-Drain Voltage

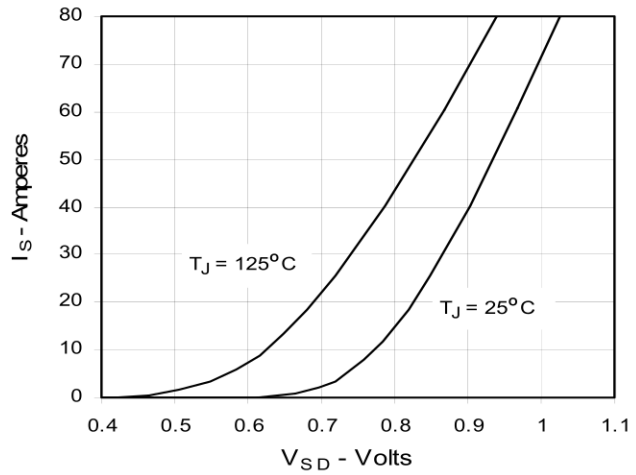


Fig. 10. Gate Charge

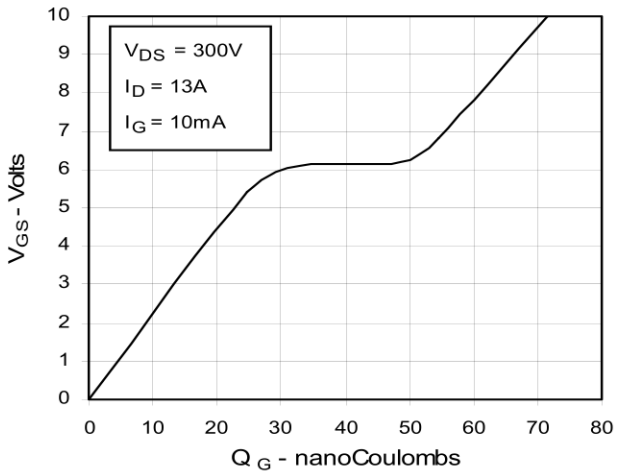


Fig. 11. Capacitance

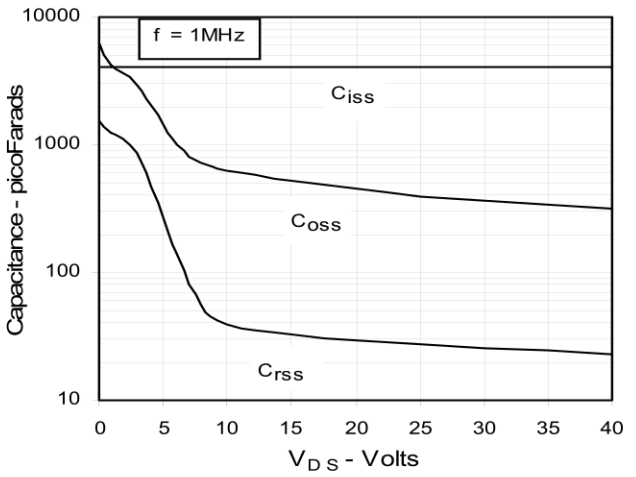
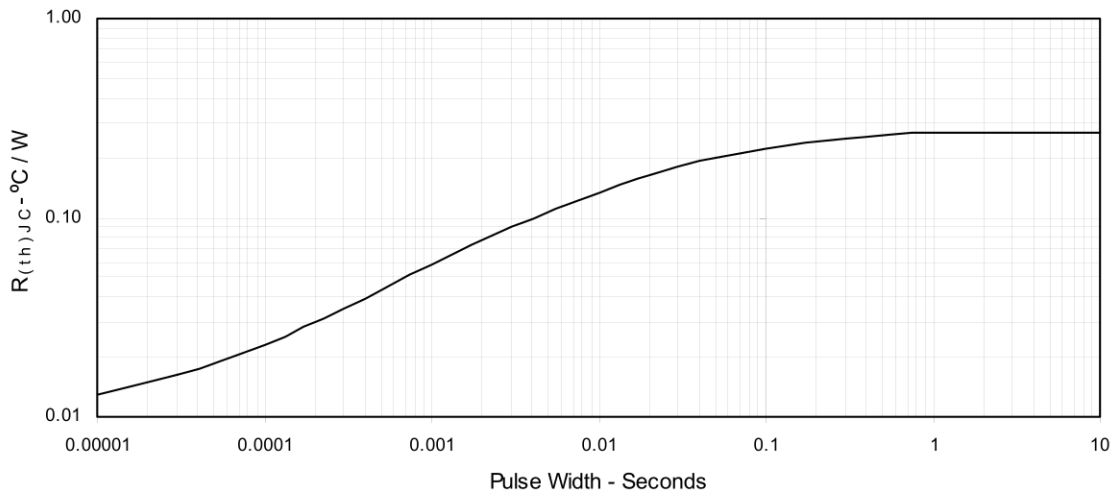
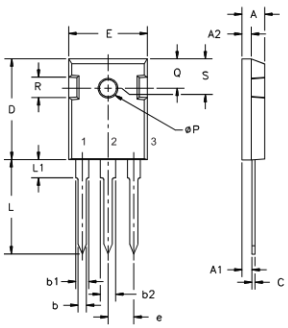


Fig. 12. Maximum Transient Thermal Resistance

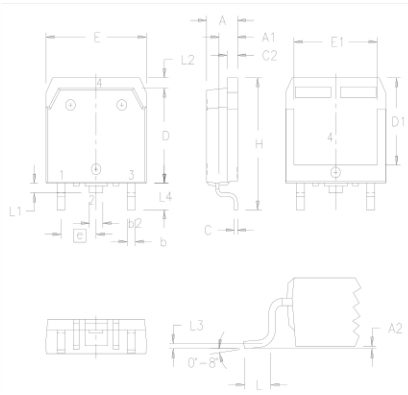


TO-247 AD (IXFH) Outline



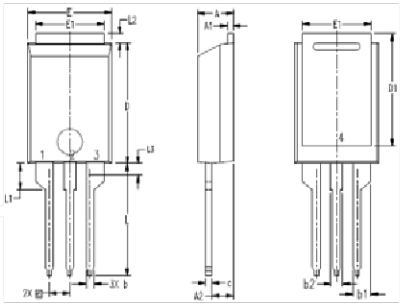
Dim.	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	4.7	5.3	.185	.209
A_1	2.2	2.54	.087	.102
A_2	2.2	2.6	.059	.098
b	1.0	1.4	.040	.055
b_1	1.65	2.13	.065	.084
b_2	2.87	3.12	.113	.123
C	.4	.8	.016	.031
D	20.80	21.46	.819	.845
E	15.75	16.26	.610	.640
e	5.20	5.72	0.205	0.225
L	19.81	20.32	.780	.800
L1		4.50		.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
A1	.106	.114	2.70	2.90
A2	.001	.010	0.02	0.25
b	.045	.057	1.15	1.45
b2	.075	.083	1.90	2.10
C	.016	.026	0.40	0.65
C2	.057	.063	1.45	1.60
D	.543	.551	13.80	14.00
D1	.488	.500	12.40	12.70
E	.624	.632	15.85	16.05
E1	.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
L1	.047	.055	1.20	1.40
L2	.039	.045	1.00	1.15
L3	.010 BSC		0.25 BSC	
L4	.150	.161	3.80	4.10

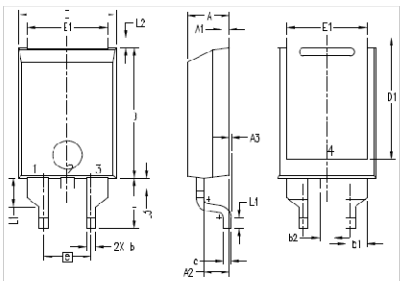
PLUS220 (IXFV) Outline

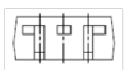


1. GATE
2. DRAIN (COLLECTOR)
3. SOURCE (EMITTER)
4. DRAIN (COLLECTOR)

SYM	INCHES		MILLIMETER	
	MIN	MAX	MIN	MAX
A	.169	.185	4.30	4.70
A1	.028	.035	0.70	0.90
A2	.098	.118	2.50	3.00
b	.035	.047	0.90	1.20
b1	.080	.095	2.03	2.41
b2	.054	.064	1.37	1.63
c	.028	.035	0.70	0.90
D	.551	.591	14.00	15.00
D1	.512	.539	13.00	13.70
E	.394	.433	10.00	11.00
E1	.331	.346	8.40	8.80
e	.100 BSC		2.54 BSC	
L	.512	.551	13.00	14.00
L1	.118	.138	3.00	3.50
L2	.035	.051	0.90	1.30
L3	.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
A1	.028	.035	0.70	0.90
A2	.098	.118	2.50	3.00
A3	.000	.010	0.00	0.25
b	.035	.047	0.90	1.20
b1	.080	.095	2.03	2.41
b2	.054	.064	1.37	1.63
c	.028	.035	0.70	0.90
D	.551	.591	14.00	15.00
D1	.512	.539	13.00	13.70
E	.394	.433	10.00	11.00
E1	.331	.346	8.40	8.80
e	.200BSC		5.08 BSC	
L	.209	.228	5.30	5.80
L1	.118	.138	3.00	3.50
L2	.035	.051	0.90	1.30
L3	.047	.059	1.20	1.50
L4	.039	.059	1.00	1.50

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