

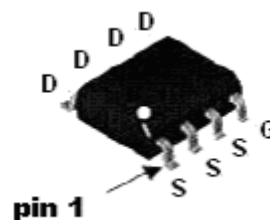
P-CHANNEL ENHANCEMENT MODE POWER MOSFET

Features:

- Simple drive requirement
- Low on-resistance
- Fast switching speed
- Pb-free lead plating package

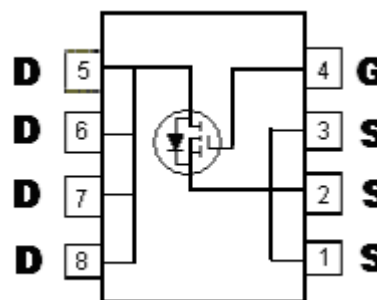
Outline

SOP-8



Equivalent Circuit

KSC9435BDY



G : Gate S :Source D : Drain

BV _{DSS}	-30V
I _D	-8.4A
R _{DS(on)(MAX)} @V _{GS} =-10V, I _D =-7A	23mΩ (typ.)
R _{DS(on)(MAX)} @V _{GS} =-4.5V, I _D =-5A	38mΩ (typ.)

Ordering Information

Device	Package	Shipping
KSC9435BDY	SOP-8 (Pb-free lead plating and halogen-free package)	2500 pcs / tape & reel

Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Drain-Source Breakdown Voltage	BV _{DSS}	-30	V
Gate-Source Voltage	V _{GS}	±20	V
Continuous Drain Current (Note 1) @ V _{GS} =-10V	I _D	-8.4	A
Pulsed Drain Current (Note 2)	I _{DM}	-40	A
Total Power Dissipation (Note 1)	P _d	2.5	W
Linear Derating Factor		0.02	W / °C
Operating Junction Temperature	T _j	-55~+150	°C
Storage Temperature	T _{stg}	-55~+150	°C
Thermal Resistance, Junction-to-Ambient (Note 1)	R _{th,j-a}	50	°C/W

Note : 1.Surface mounted on 1 in² FR-4 board with 2 oz. copper, t≤10sec. The value in any given application depends on the user's specific board design.

2.Pulse width ≤300μs, Duty Cycle≤2%

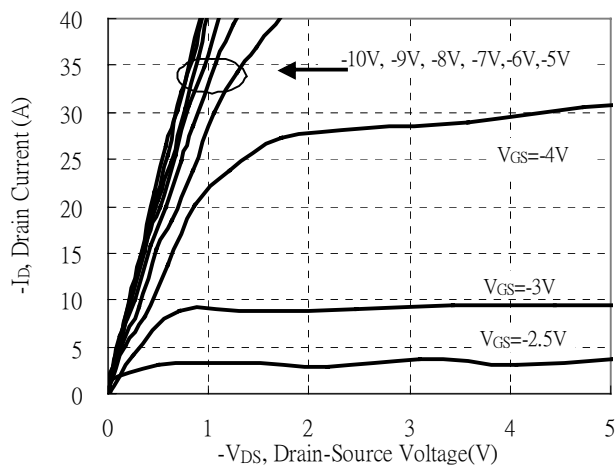
Electrical Characteristics (Tj=25°C, unless otherwise specified)

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Static					
BV _{DSS}	-30	-	-	V	V _{GS} =0, I _D =-250μA
V _{GS(th)}	-1	-1.5	-2.5	V	V _{DS} =V _{GS} , I _D =-250μA
I _{GSS}	-	-	±100	nA	V _{GS} =±20V, V _{DS} =0
I _{DSS}	-	-	-1	μA	V _{DS} =-30V, V _{GS} =0
*R _{DS(ON)}	-	23	30	mΩ	I _D =-7A, V _{GS} =-10V
	-	38	50		I _D =-5A, V _{GS} =-4.5V
*G _{FS}	-	11	-	S	V _{DS} =-5V, I _D =-7A
Dynamic					
C _{iss}	-	1316	-	pF	V _{DS} =-15V, V _{GS} =0, f=1MHz
C _{oss}	-	143	-		
C _{rss}	-	118	-		
*t _{d(ON)}	-	14	-	ns	V _{DD} =-15V, I _D =-1A, V _{GS} =-10V, R _G =6Ω, R _D =15Ω
*t _r	-	7	-		
*t _{d(OFF)}	-	50	-		
*t _f	-	23	-		
*Q _g	-	16	-	nC	V _{DS} =-15V, V _{GS} =-10V, I _D =-7A
*Q _{gs}	-	4.9	-		
*Q _{gd}	-	5.2	-		
R _g	-	2	-	Ω	V _{DS} =0V, V _{GS} =15mV, f=1MHz
Source Drain Diode					
*V _{SD}	-	-0.77	-1.2	V	V _{GS} =0V, I _S =-1.7A
*I _S	-	-	3.5	A	
*I _{SM}	-	-	14		
*t _{rr}	-	23	-	ns	I _F =7A, dI _F /dt=100A/μs
*Q _{rr}	-	14	-	nC	

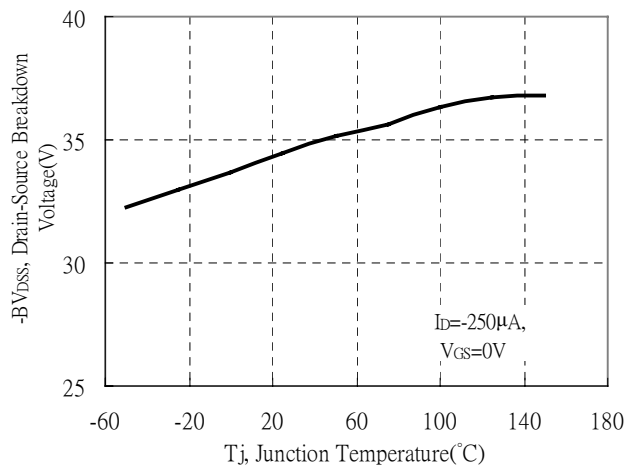
*Pulse Test : Pulse Width ≤300μs, Duty Cycle≤2%

Typical Characteristics

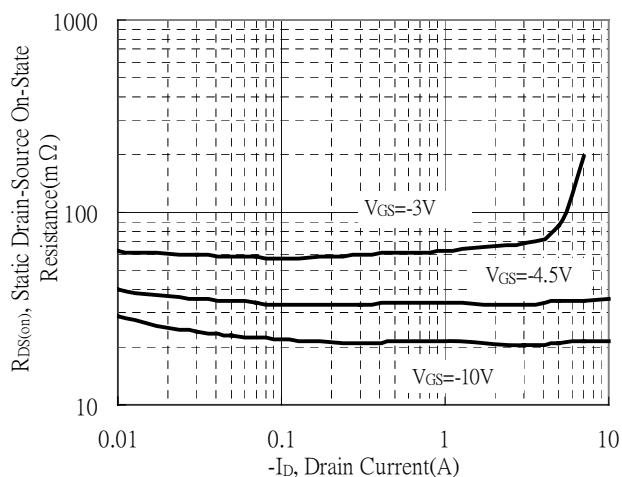
Typical Output Characteristics



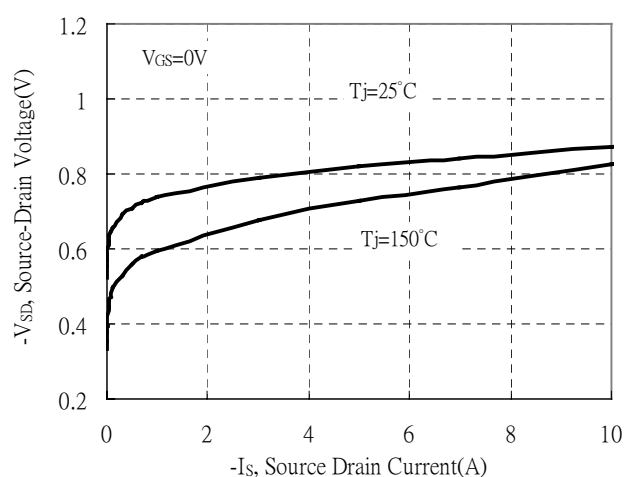
Breakdown Voltage vs Ambient Temperature



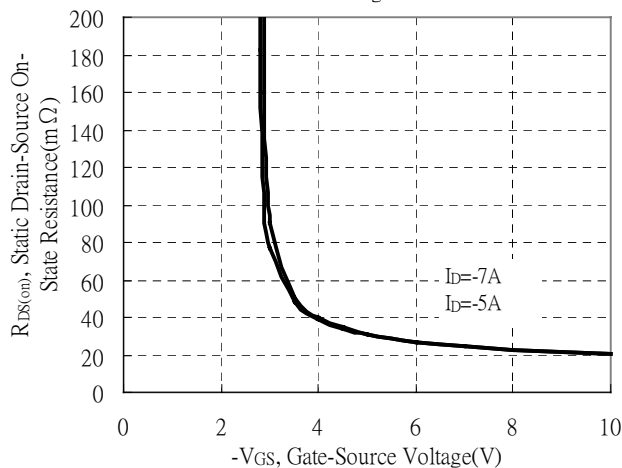
Static Drain-Source On-State resistance vs Drain Current



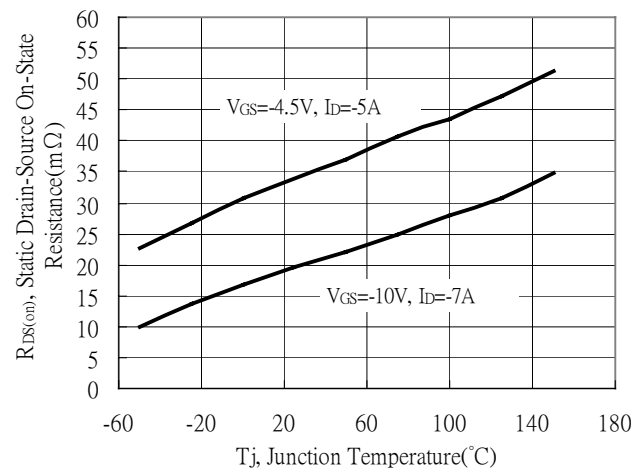
Source Drain Current vs Source-Drain Voltage



Static Drain-Source On-State Resistance vs Gate-Source Voltage

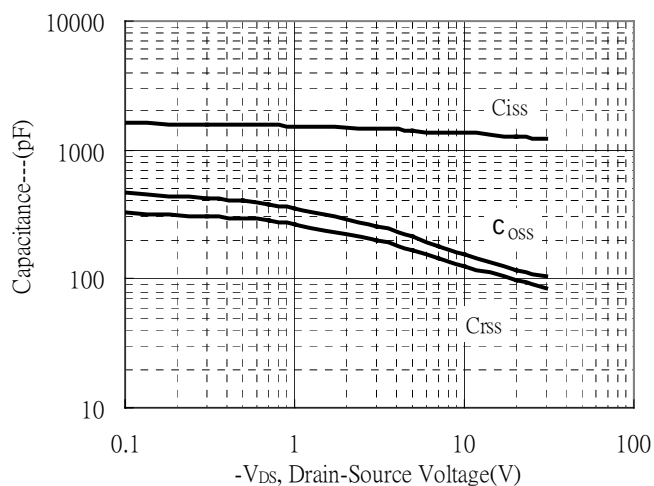


Drain-Source On-State Resistance vs Junction Temperature

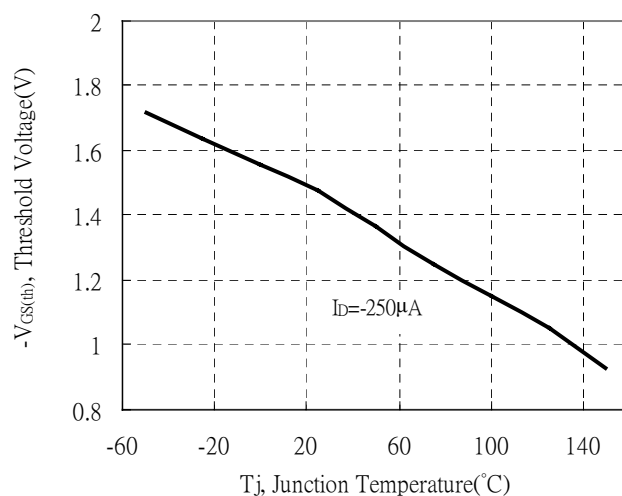


Typical Characteristics(Cont.)

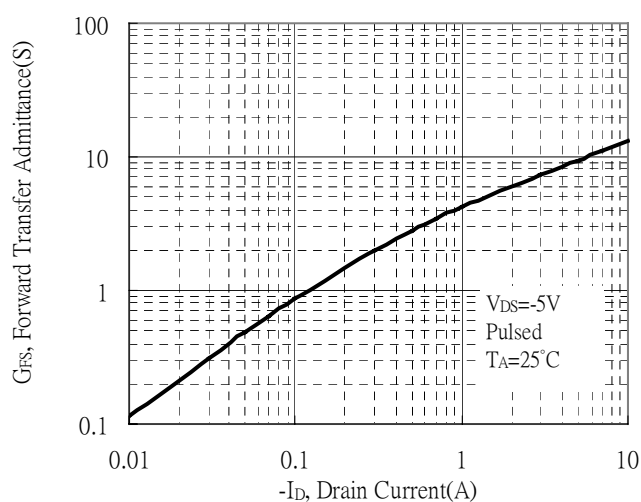
Capacitance vs Drain-to-Source Voltage



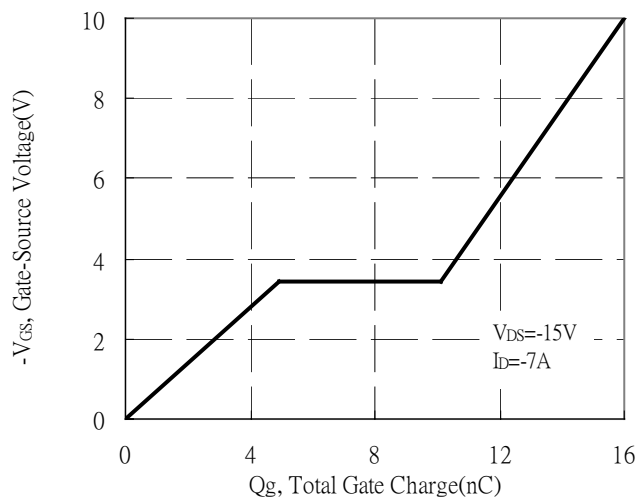
Threshold Voltage vs Junction Temperature



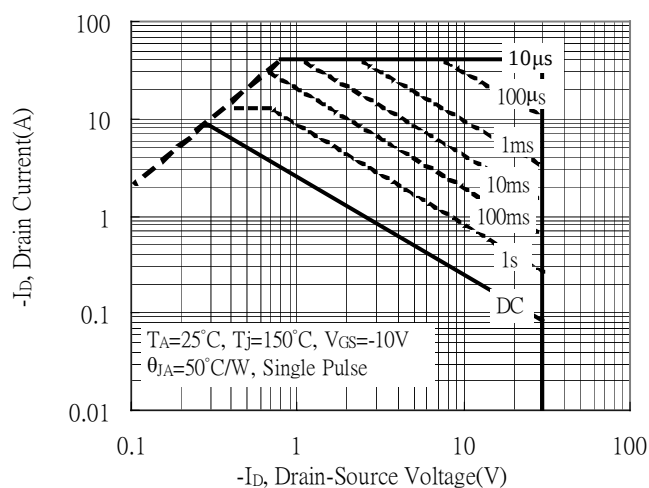
Forward Transfer Admittance vs Drain Current



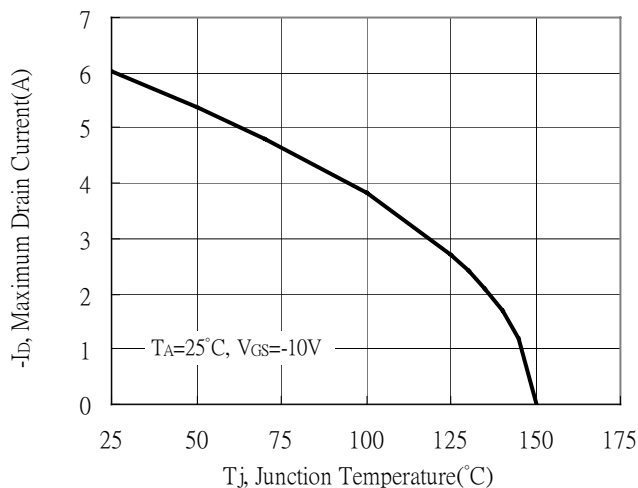
Gate Charge Characteristics



Maximum Safe Operating Area

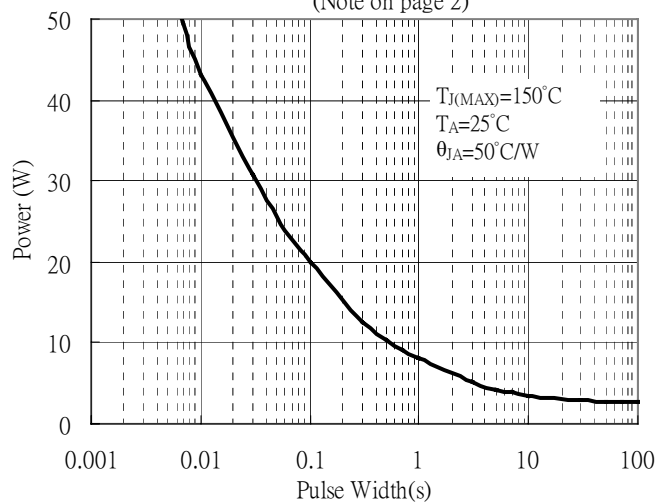


Maximum Drain Current vs Junction Temperature

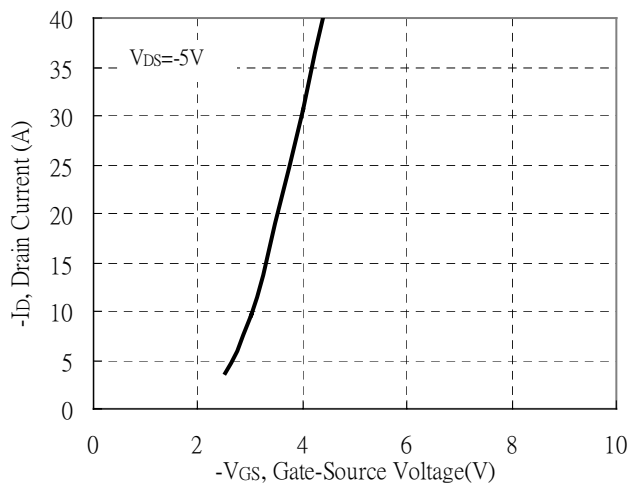


Typical Characteristic Curves(Cont.)

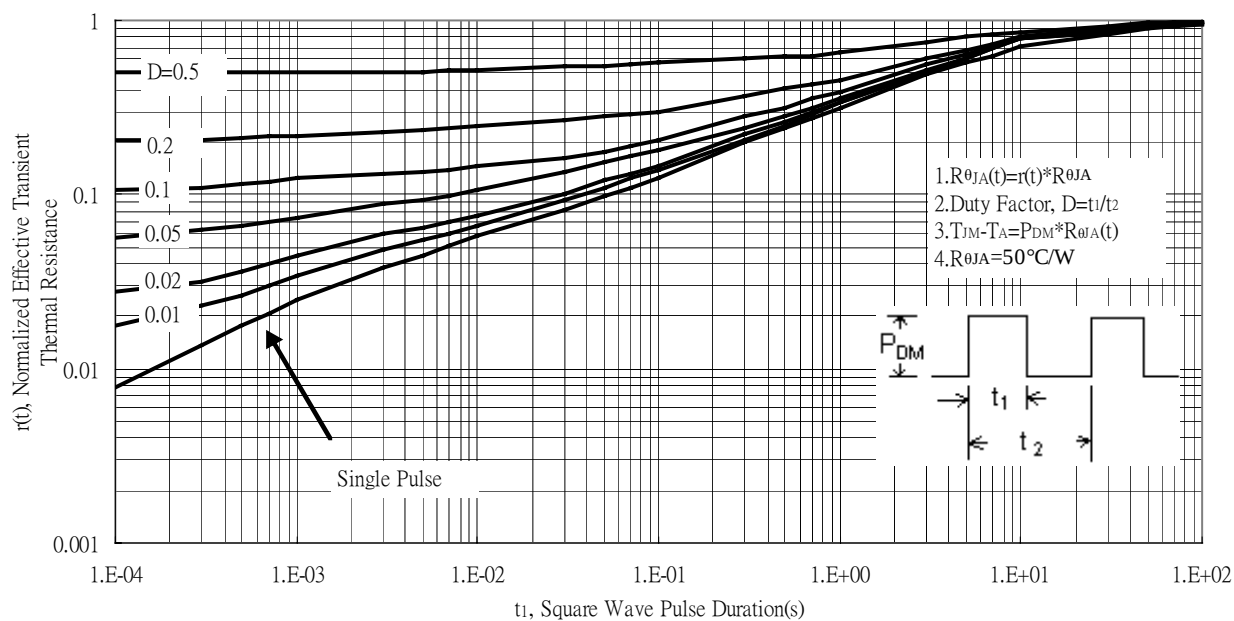
Single Pulse Power Rating, Junction to Ambient
 (Note on page 2)



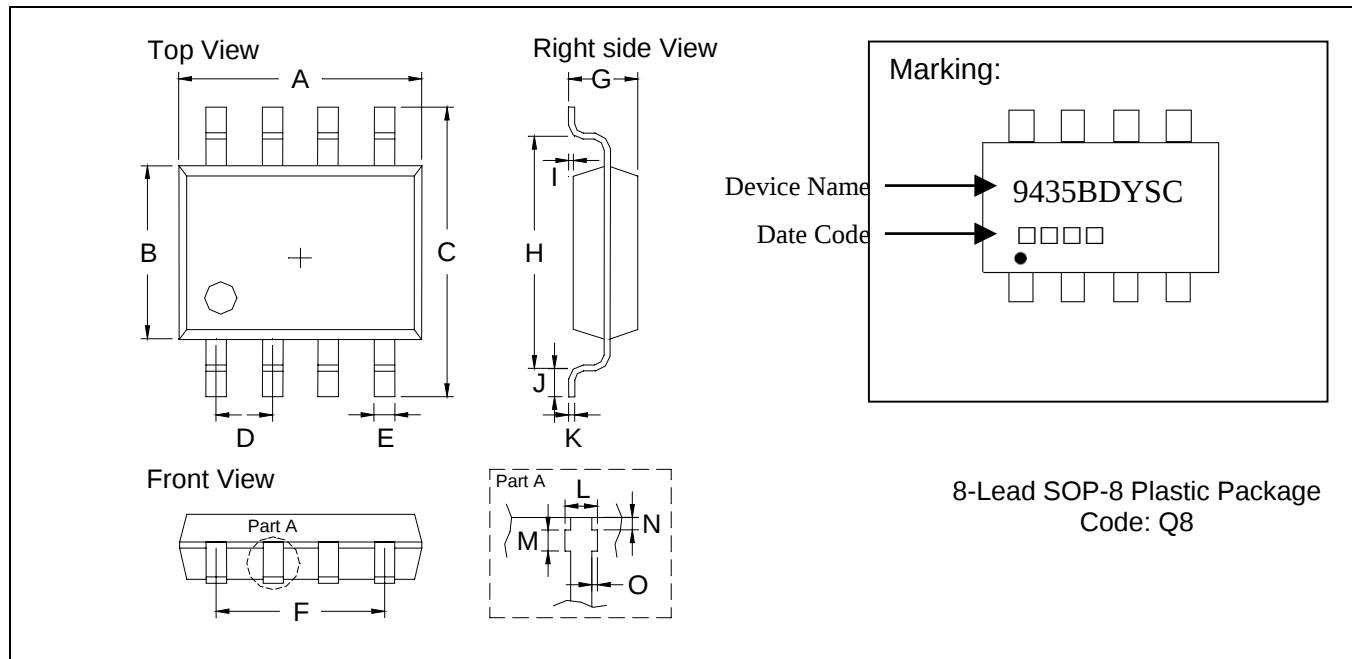
Typical Transfer Characteristics



Transient Thermal Response Curves



SOP-8 Dimension



*: Typical

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.1890	0.2007	4.80	5.10	I	0.0098	REF	0.25	REF
B	0.1496	0.1654	3.80	4.20	J	0.0118	0.0354	0.30	0.90
C	0.2283	0.2441	5.80	6.20	K	0.0074	0.0098	0.19	0.25
D	0.0480	0.0519	1.22	1.32	L	0.0145	0.0204	0.37	0.52
E	0.0138	0.0193	0.35	0.49	M	0.0118	0.0197	0.30	0.50
F	0.1472	0.1527	3.74	3.88	N	0.0031	0.0051	0.08	0.13
G	0.0531	0.0689	1.35	1.75	O	0.0000	0.0059	0.00	0.15
H	0.1889	0.2007	4.80	5.10					