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XINBOLE

Product Specification

FDMC4435BZ

P-Channel Enhancement Mode MOSFET

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Descriptions

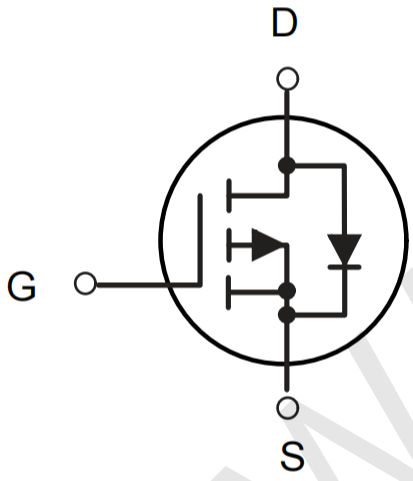
The FDMC4435BZ uses advanced trench technology and design to provide excellent $R_{DS(ON)}$ with low gate charge .This device is well suited for high current load applications.

Features

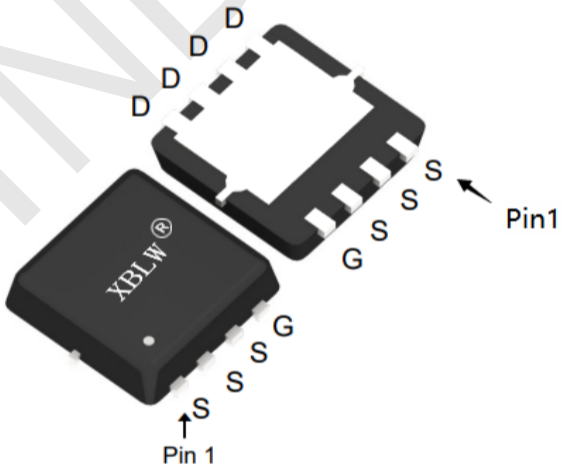
- V_{DS} = -30V,I_D = -35A
- $R_{DS(ON)}$ <15mΩ @ V_{GS}=- 10V
- $R_{DS(ON)}$ <26mΩ @ V_{GS}=- 4.5V

Applications

- High side switch for full bridge converter
- DC/DC converter for LCD display



P-Channel MOSFET



DFN3X3-8L

Ordering Information

Product Model	Package Type	Marking	Packing	Packing Qty
FDMC4435BZ	DFN3X3-8L	FDMC4435	Tape	5000Pcs/Reel

Absolute Maximum Ratings (T_J=25 °C unless otherwise specified)

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	-30	V
V_{GS}	Gate-Source Voltage	±20	V
I_D@T_A=25°C	Drain Current[3], V_{GS} @ 10V	-35	A
I_D@T_A=70°C	Drain Current[3], V_{GS} @ 10V	-25	A
IDM	Pulsed Drain Current[1]	-120	A
P_D@T_A=25°C	Total Power Dissipation	15	W
TSTG	Storage Temperature Range	-55 to 150	°C
T_J	Operating Junction Temperature Range	-55 to 150	°C
Rthj-c	Maximum Thermal Resistance, Junction-case	6	°C/W
Rthj-a	Maximum Thermal Resistance, Junction-ambient[3]	66	°C/W

Electrical Characteristics (T_J=25°C unless otherwise specified)

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	V_{GS}=0V, I_D= -250μA	-30	-	-	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}= -30V, V_{GS}=0V,	-	-	-1	μA
I_{GSS}	Gate to Body Leakage Current	V_{DS}=0V, V_{GS}= ±20V	-	-	±100	nA
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}=V_{GS}, I_D= -250μA	-1.0	-1.6	-2.5	V
$R_{DS(on)}$ Note3	Static Drain-Source on-Resistance	V_{GS}= -10V, I_D= -10A	-	12	15	mΩ
		V_{GS}= -4.5V, I_D= -5A	-	18	26	
C_{iss}	Input Capacitance	V_{DS}= -15V, V_{GS}=0V, f=1.0MHz	-	1330	-	pF
C_{oss}	Output Capacitance		-	183	-	pF
C_{rss}	Reverse Transfer Capacitance		-	156	-	pF
Q_g	Total Gate Charge	V_{DS}= -15V, I_D= -5A, V_{GS}= -10V	-	22	-	nC
Q_{gs}	Gate-Source Charge		-	1.0	-	nC
Q_{gd}	Gate-Drain("Miller") Charge		-	1.8	-	nC
$t_{d(on)}$	Turn-on Delay Time	V_{DD}= -15V, I_D= -10A, V_{GS}=-10V, R_{GEN}=2.5Ω	-	9	-	ns
t_r	Turn-on Rise Time		-	13	-	ns
$t_{d(off)}$	Turn-off Delay Time		-	48	-	ns
t_f	Turn-off Fall Time		-	20	-	ns
I_S	Maximum Continuous Drain to Source Diode Forward Current		-	-	-35	A
I_{SM}	Maximum Pulsed Drain to Source Diode Forward Current		-	-	-90	A
V_{SD}	Drain to Source Diode Forward Voltage	V_{GS}=0V, I_S= -15A	-	-0.8	-1.2	V
trr	Reverse Recovery Time	T_J=25°C, V_{DD}= -24V,I_F=-2.8A, dI/dt=-100A/μs	-	64	-	ns
Qrr	Reverse Recovery Charge		-	25	-	nC

Notes:
1. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature.
2. E_{AS} condition: T_J=25°C, V_{GS}=10V, R_G=25Ω, L=0.5mH, I_{AS}=-12.7A.
3. Pulse Test: Pulse Width≤300μs, Duty Cycle≤0.5%

Typical Characteristics

Fig 1. Output Characteristics

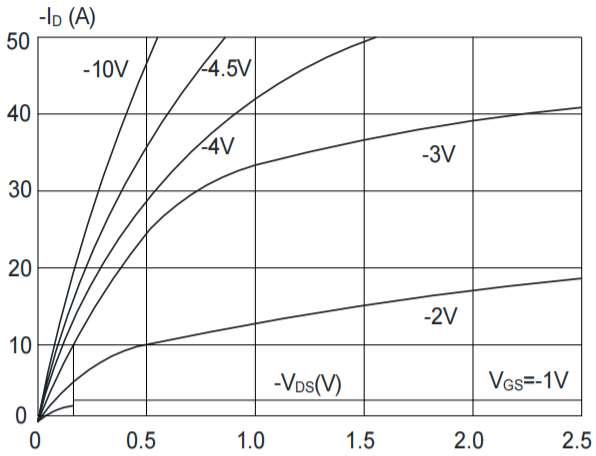


Fig 2. Typical Transfer Characteristics

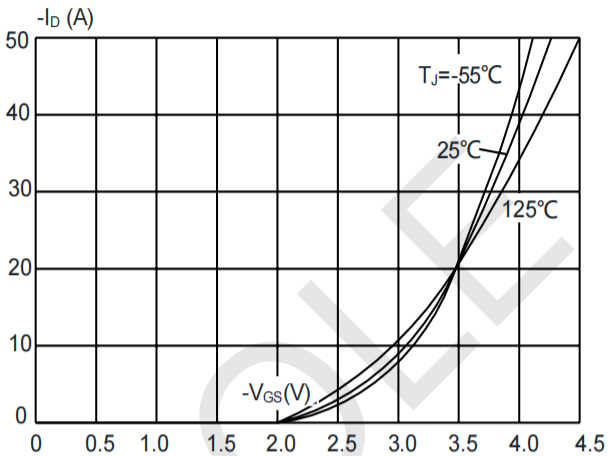


Fig 3. On-resistance vs. Drain Current

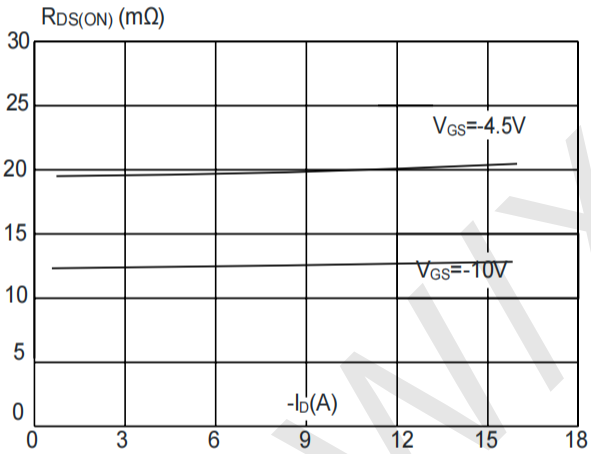


Fig 4. Body Diode Characteristics

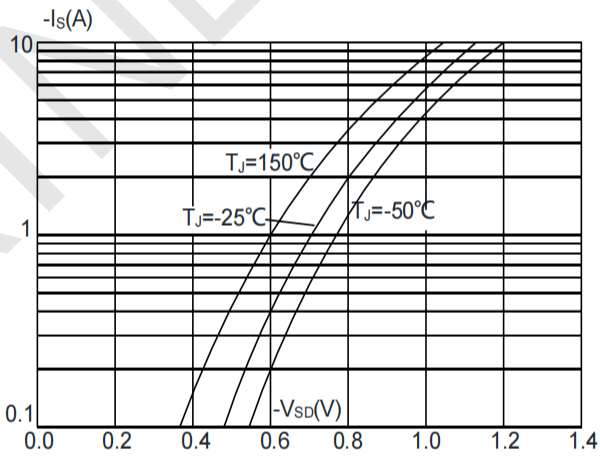


Fig 5. Gate Charge Characteristics

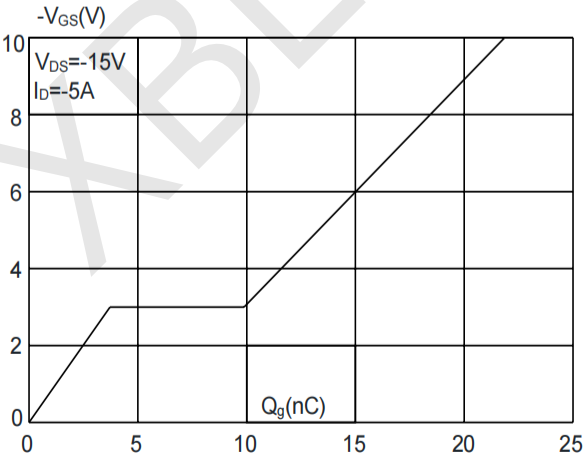


Fig 6. Capacitance Characteristics

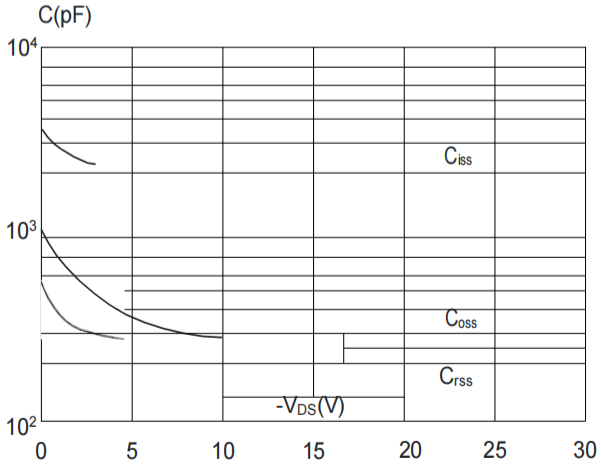


Fig 7. Normalized Breakdown Voltage vs. Junction Temperature

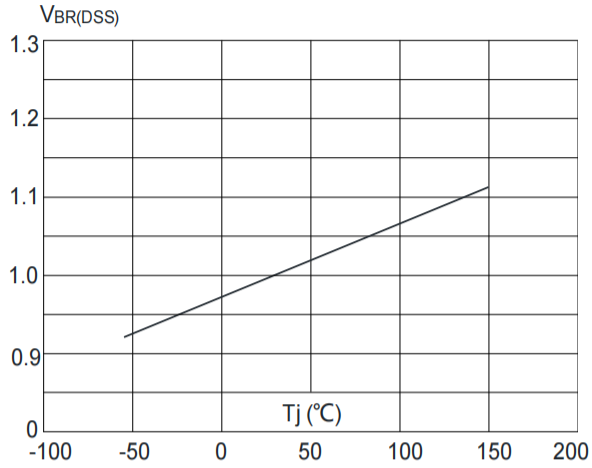


Fig 8. Normalized on Resistance vs. Junction Temperature

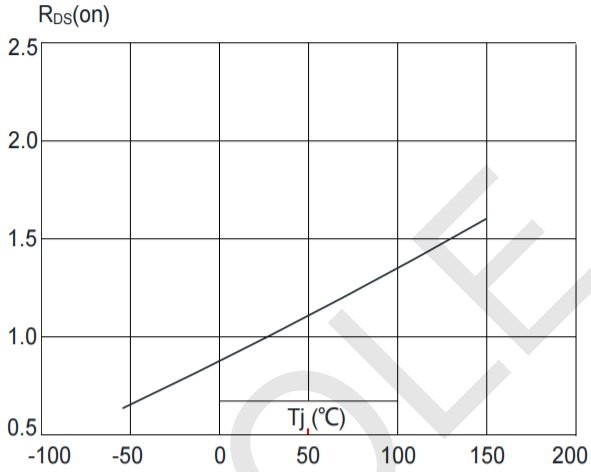


Fig 9. Maximum Safe Operating Area

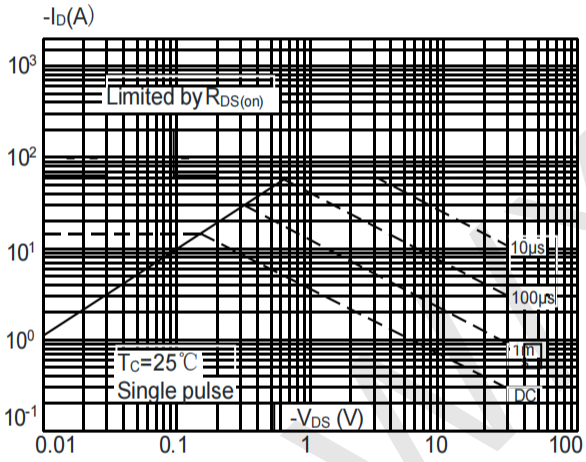


Fig 10.Maximum Continuous Drain Current vs. Case Temperature

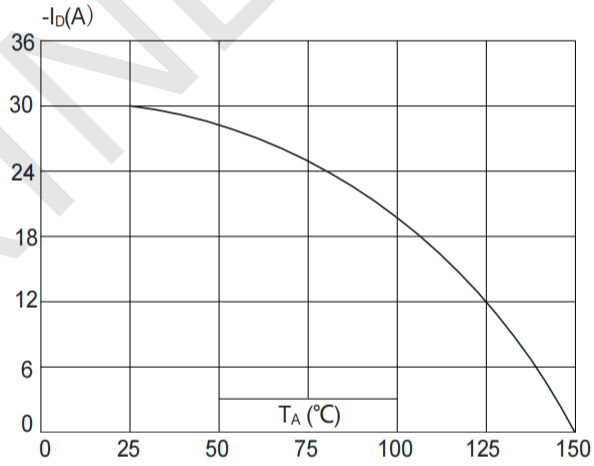
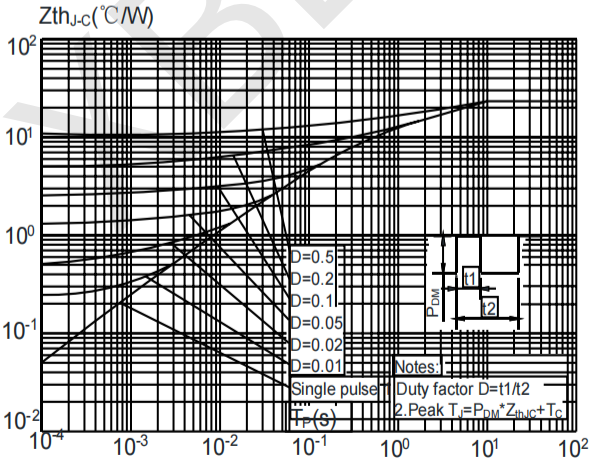
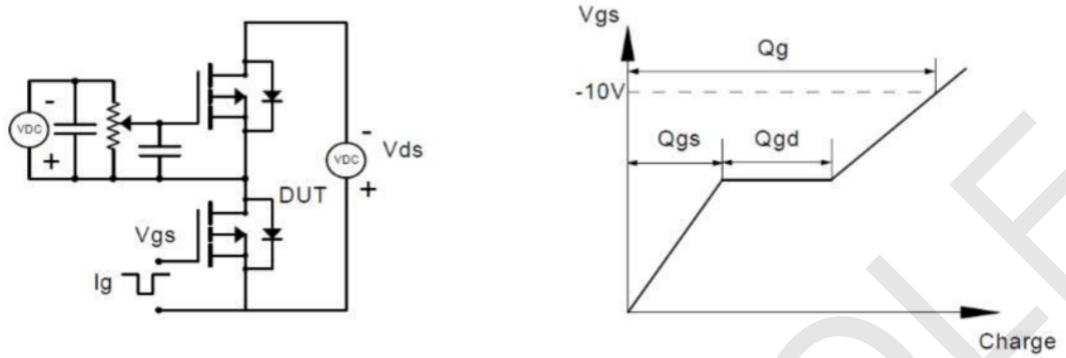


Fig 11. Maximum Effective Transient Thermal Impedance, Junction-to-Case

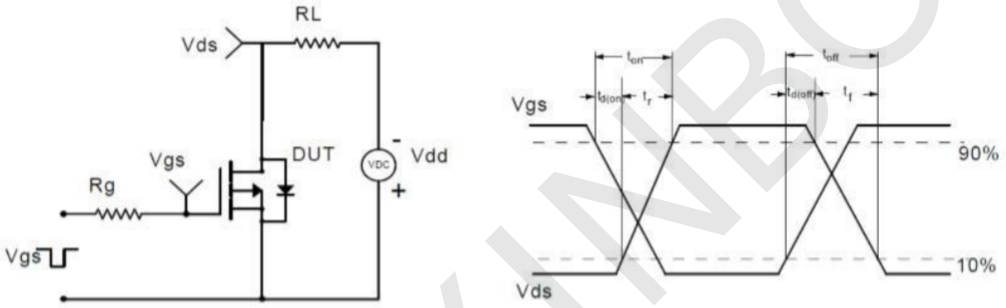


Test Circuit

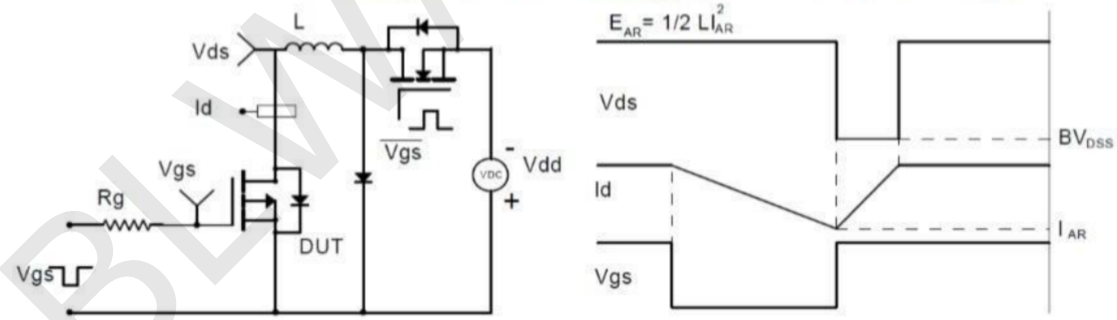
Gate Charge Test Circuit & Waveform



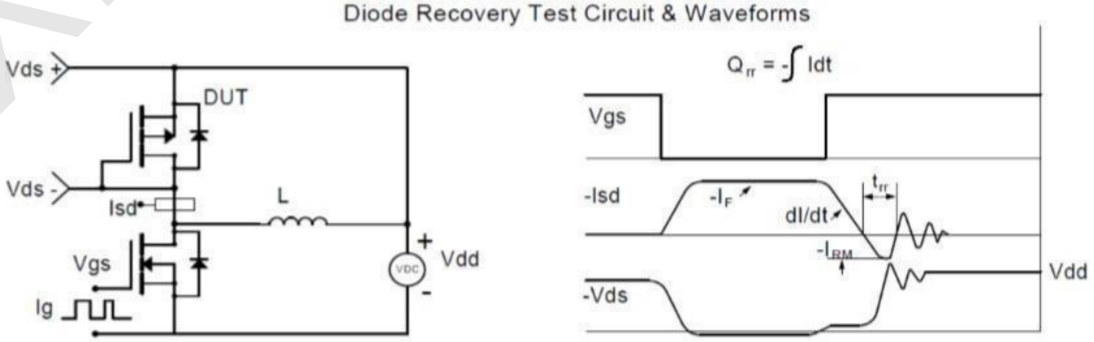
Resistive Switching Test Circuit & Waveforms



Unclamped Inductive Switching (UIS) Test Circuit & Waveforms



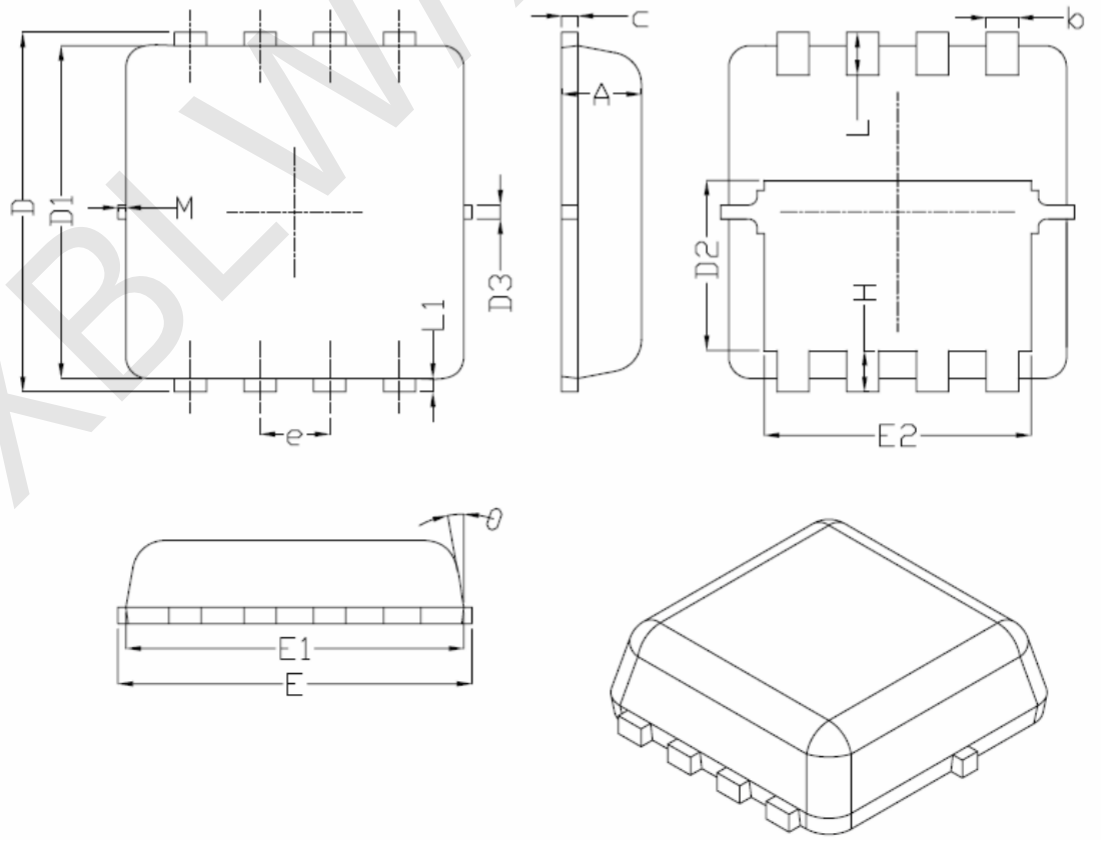
Diode Recovery Test Circuit & Waveforms



Package Information

DFN3X3-8L

Symbol	Dimensions In Millimeters		
	Min.	Nom.	Max.
A	0.70	0.75	0.80
b	0.25	0.30	0.35
c	0.10	0.15	0.25
D	3.25	3.35	3.45
D1	3.00	3.10	3.20
D2	1.48	1.58	1.68
D3	-	0.13	-
E	3.20	3.30	3.40
E1	3.00	3.15	3.20
E2	2.39	2.49	2.59
e	0.65BSC		
H	0.30	0.39	0.50
L	0.30	0.40	0.50
L1	-	0.13	-
M	*	*	0.15
θ		10°	12°



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