CM04N60-TO252

Data Sheet

Version: V0.2

2025/06 version 0.1

Features

- Originative New Design
- Superior Avalanche Rugged Technology
- Robust Gate Oxide Technology
- Very Low Intrinsic Capacitances
- Excellent Switching Characteristics
- Extended Safe Operating Area

List of Contents

Applications

- Switching Mode Power Supply
- HID Lamp
- BLDC Motor

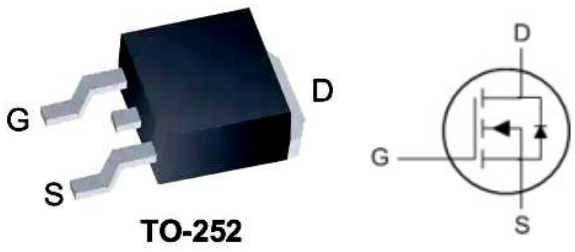
1 Description

The CM04N60-TO252 uses advanced MOSFET Technology, which provides high performance in on-state resistance, fast switching performance and excellent quality.

2. Product Summary

BVDSS	RDSON	ID
600V	2.5Ω	4A

3 TO252 Pin Description



4 Absolute Ratings (T_A = 25℃ in a TO-252 package unless otherwise noted)

Parameter	Symbol	Value		Units
Drain-Source Voltage	V_{DS}	+600		V
Gate-Source Voltage	V_{GS}	±30		V
Junction Temperature Maximum	T_{JMAX}	150		°C
Storage Temperature	$T_{Storage}$	-25 to 150		°C

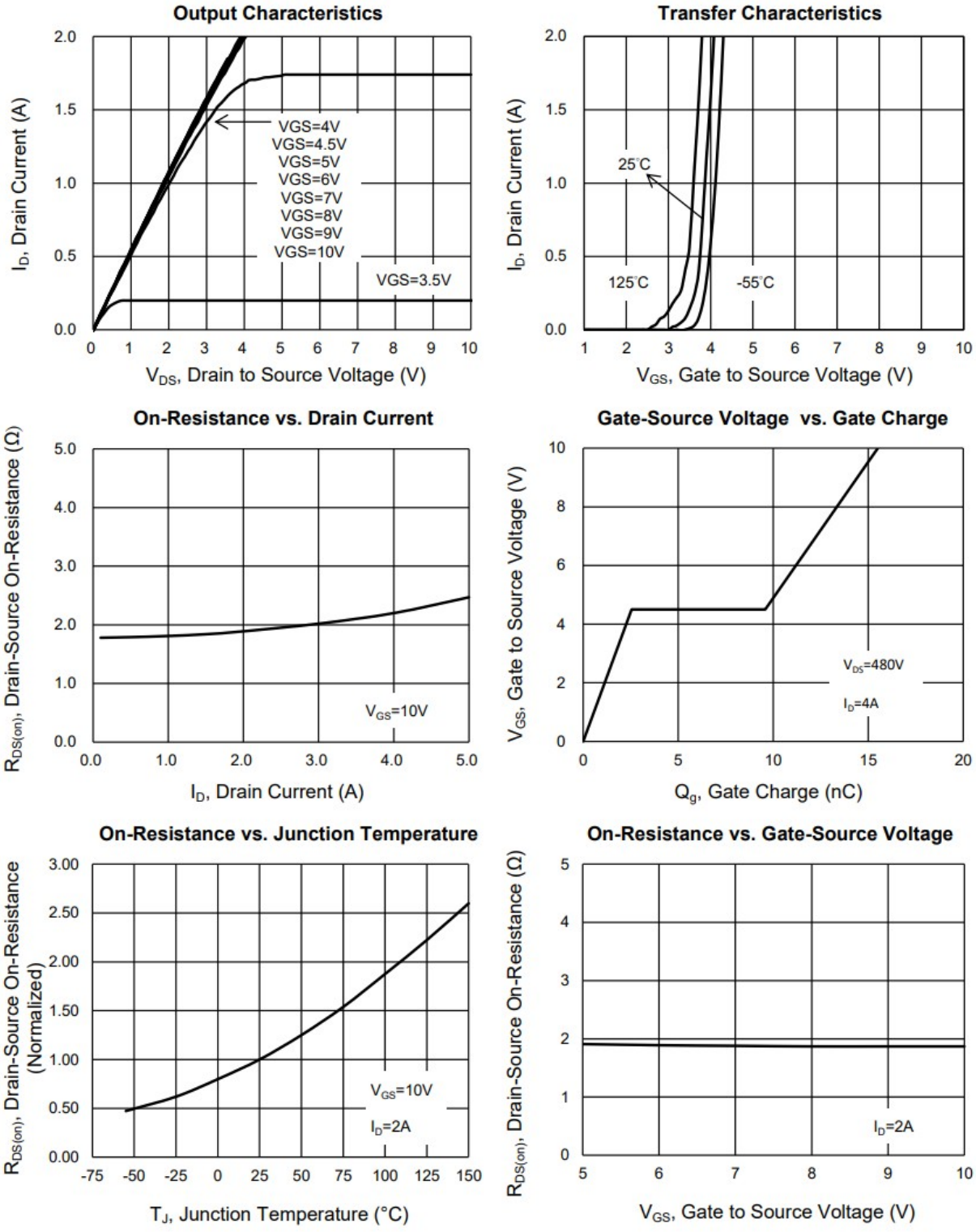
5 Thermal Characteristics

Parameter	Symbol	Value	Units
Thermal Resistance Junction-Ambient	$R_{\theta JA}$	62	°C/W

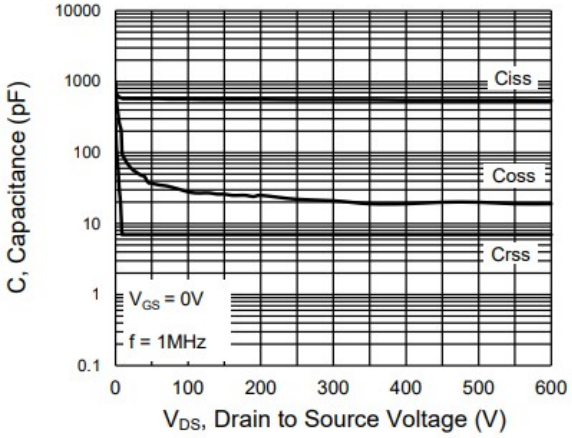
6 Electrical Characteristics

Static (T_J=25℃ unless otherwise specified)						
Parameter	**Symbol**	**Test Conditions**	**Min.**	**Typ.**	**Max.**	**Units**
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS} = 0V, I_D = 250uA	600	---	---	V
Gate-Body Leakage Current	I_{GSS}	V_{GS} = ±30V, V_{DS} = 0V	---	---	±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = 600V, V_{GS} = 0V	---	---	10	uA
Drain-Source On-State Resistance	$R_{DS(on)}$	V_{GS} = 10V, I_D = 1A	---	2.1	2.5	Ω
Gate-Source Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = 250uA	2.5	---	4.5	V
Dynamic (T_J=25℃ unless otherwise specified)						
Parameter	**Symbol**	**Test Conditions**	**Min.**	**Typ.**	**Max.**	**Units**
Input Capacitance	C_{iss}	V_{GS} = 0V, V_{DS} = 25 V, f = 1MHz	---	574	---	pF
Output Capacitance	C_{oss}		---	56	---	
Reverse Transfer Capacitance	C_{rss}		---	7	---	
Total Gate Charge	Q_g	V_{DS} = 480V, I_D = 4A, V_{GS} = 10V	---	16	---	nC
Gate-Source Charge	Q_{gs}		---	2.6	---	
Gate-Drain Charge	Q_{gd}		---	7	---	
Turn-on delay time	$T_{d(on)}$	V_{DS} = 300V, I_D = 4A, V_{GS} = 10V, R_G=25Ω	---	11	---	nS
Rise time	T_r		---	14	---	
Turn-off delay time	$T_{d(off)}$		---	38	---	
Fall time	T_f		---	21	---	
Reverse Diode Characteristics						
Continuous Source Current	I_S	V_{GS} = 0V, V_{DS}Open, f=1MHz	---	---	4	A
Diode Forward Voltage	V_{SD}	I_S = 4A, V_{GS} = 0V	---	---	1.13	V
Reverse Recovery Time	t_{rr}	IF=0.5A, IR=1A, IRR=0.25A	---	56	---	ns
Reverse Recovery Charge	Q_{rr}		---	0.2	---	nC

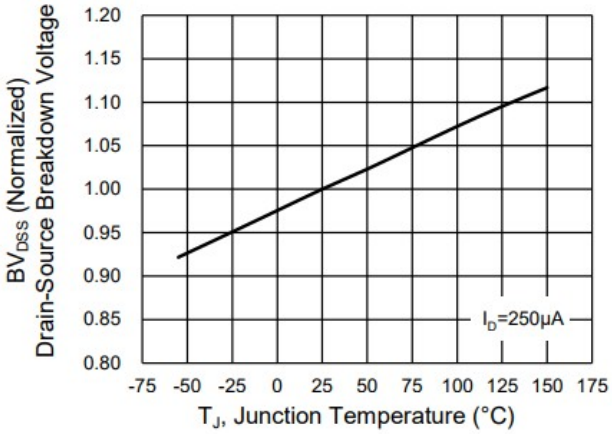
7 Typical Electrical Characteristics



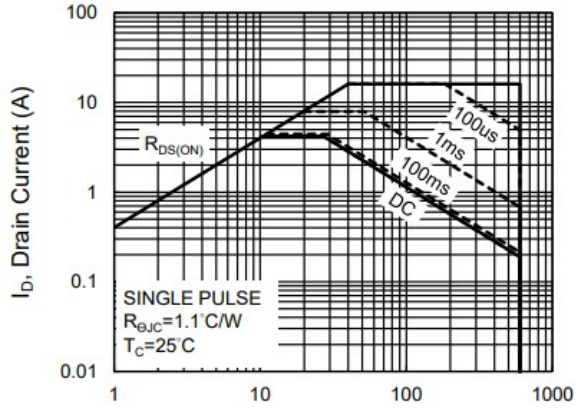
Capacitance vs. Drain-Source Voltage



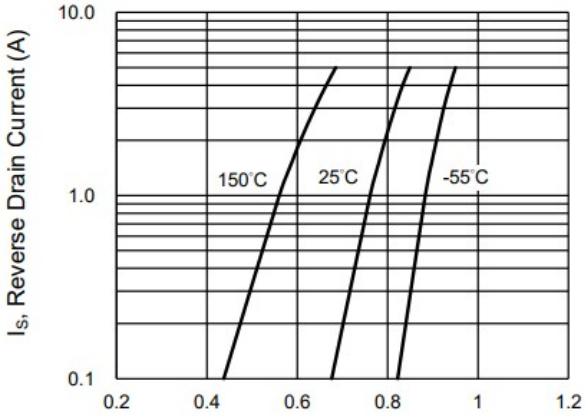
BV_{DSS} vs. Junction Temperature



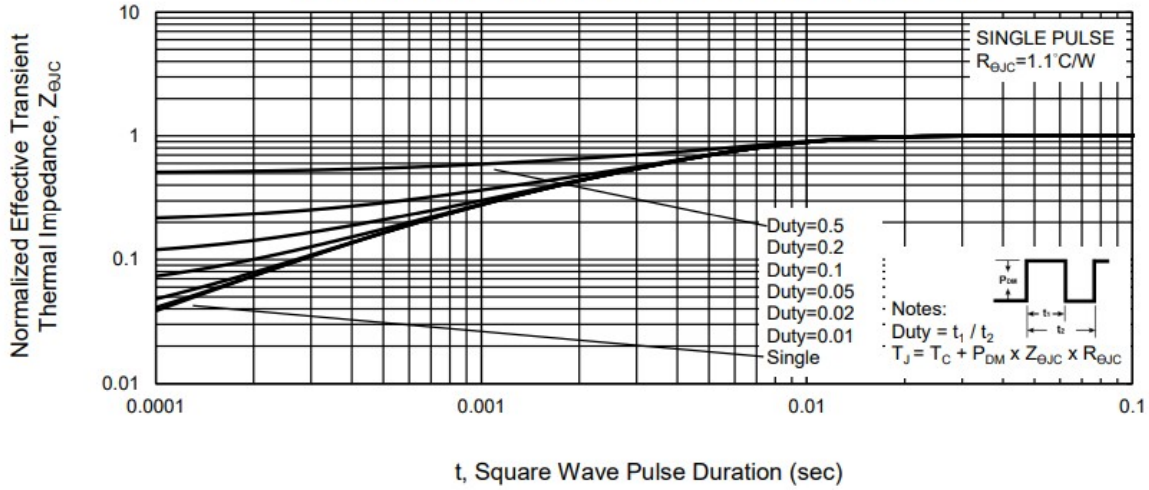
Maximum Safe Operating Area, Junction-to-Case



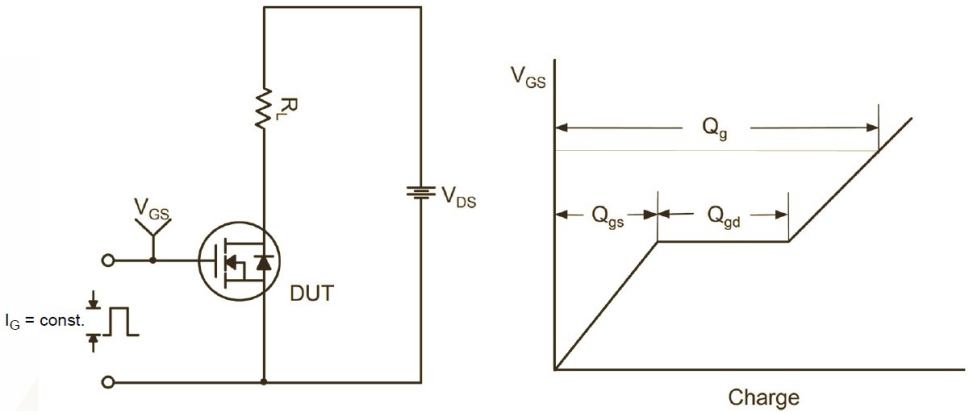
Source-Drain Diode Forward Current vs. Voltage



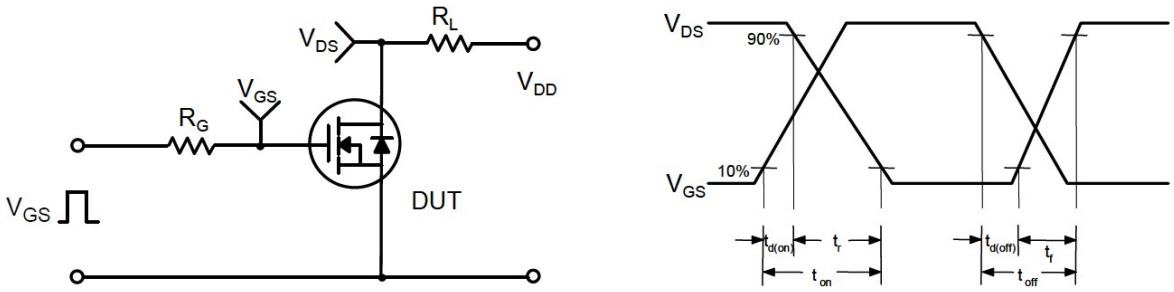
Normalized Thermal Transient Impedance, Junction-to-Case



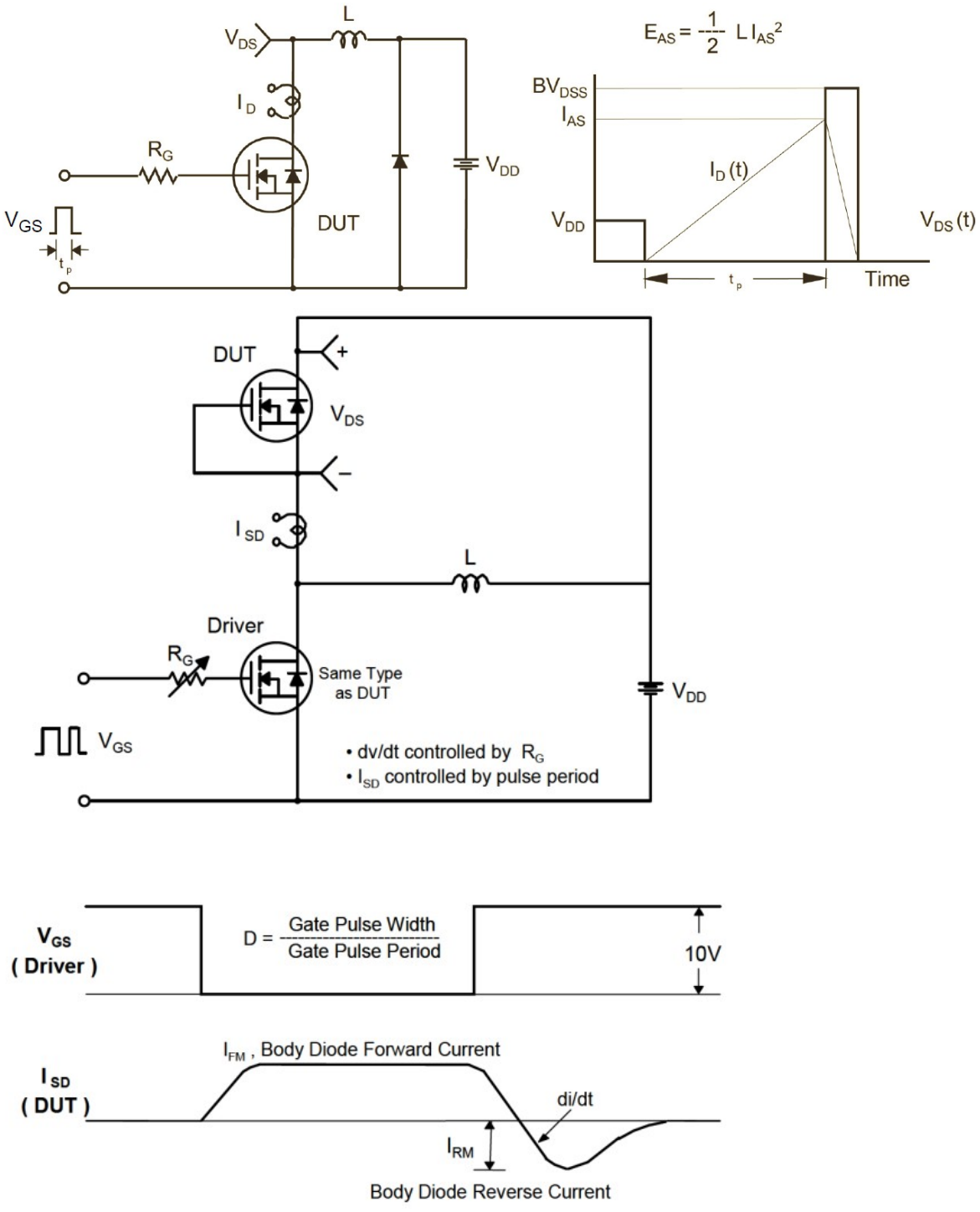
8 Test Circuit and Waveform



Gate Charge Test Circuit & Waveform

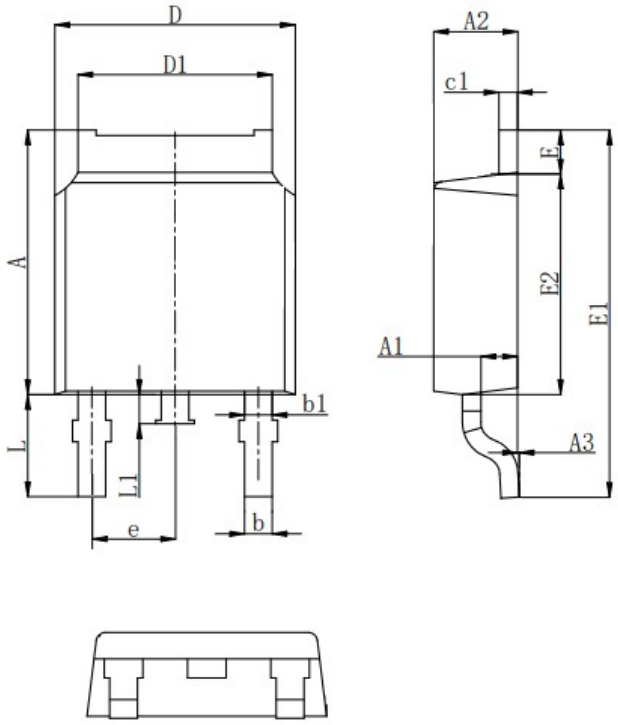


Resistive Switching Test Circuit & Waveforms



Peak Diode Recovery dv/dt Test Circuit & Waveforms

9 TO-252 Package Information



Dimension	A	A1	A2	A3	b	b1	c1	D	D1	E	E1	E2	e	L	L1
Min.	7.0	0.96	2.2	0	0.64		0.45	6.4	5.2	0.9	9.7	6.0		2.65	0.6
Typ.		1.01	2.3			1		6.6	5.35		10.0	6.1	2.286	2.8	0.8
Max.	7.45	1.06	2.4	0.12	0.88		0.58	6.7	5.5	1.25	10.3	6.2		2.95	1.0

10 Marking Distinguish