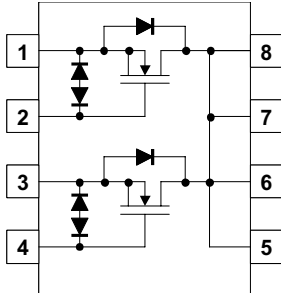
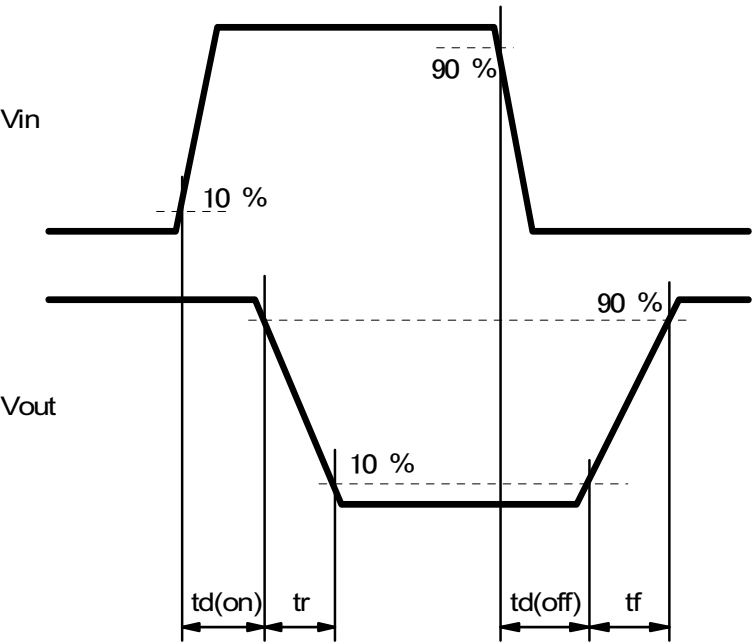
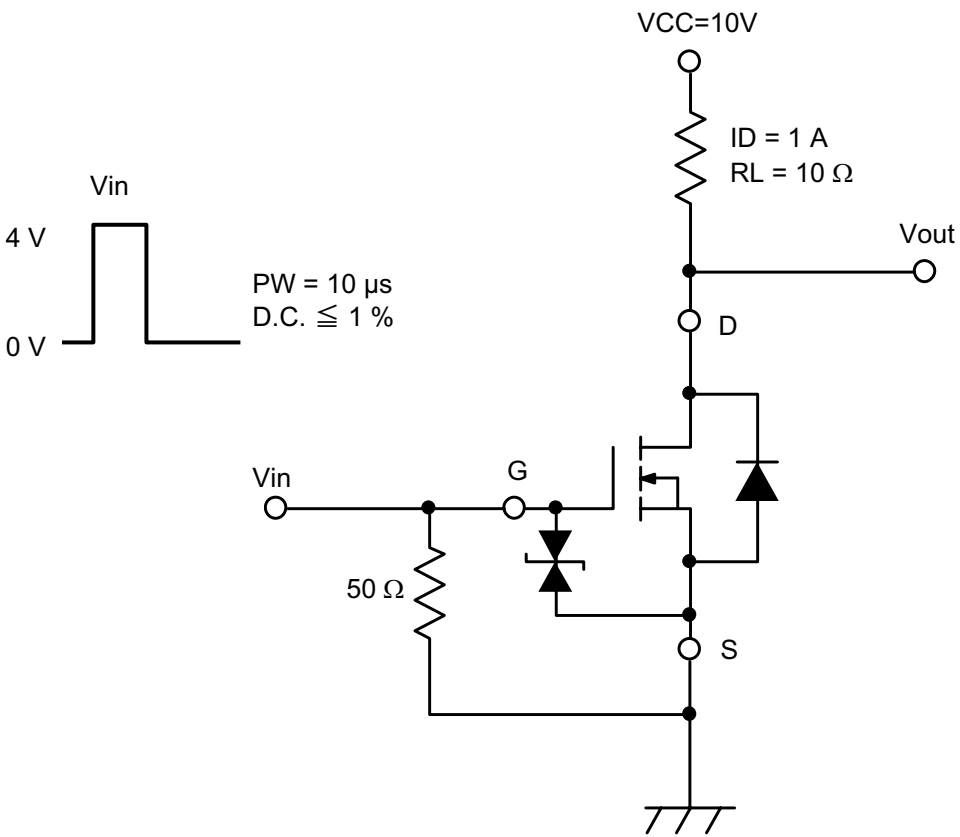


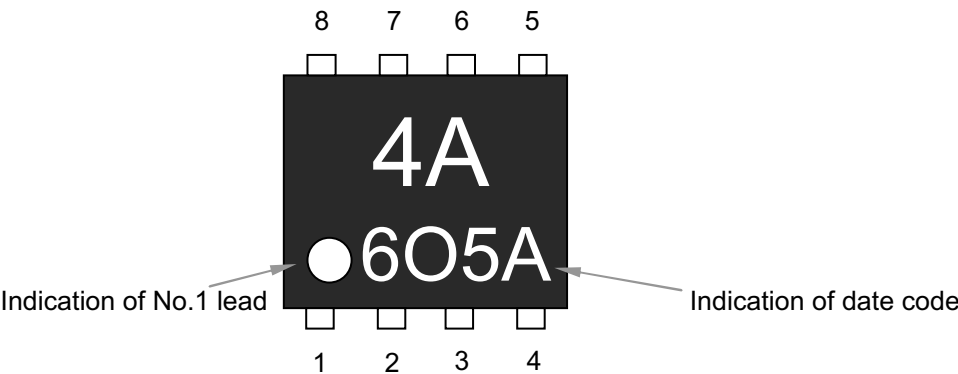
Product Specification Type Number : M T M C 8 E 2 8 0 L B F *2					Prepared by S.Miyata	Checked by M.Fujisawa	Applied by H.Shidooka	Established by K.Kemichi
Type	Silicon Field Effect Transistors							
Application	Li-ion Battery							
Structure	Dual N-Channel MOS Type							
Outline	WMini8 - F1					Marking		4A
Absolute Maximum Ratings	VDSS 20 (V)	VGSS ±10 (V)	ID 7.0 (A)	IDp 42 (A)	*3 PD 1.0 (W)	Tch 150 (°C)	Tstg -55 to +150 (°C)	
Electrical characteristics (Ta = 25 °C ±3 °C)								
Item	Symbol	Measuring condition	Limit			Unit		
			min.	typ.	max.			
Drain-Source Voltage	VDSS	ID = 1 mA, VGS = 0 V	20			V		
Drain-Source Cutoff Current	IDSS	VDS = 20 V, VGS = 0 V			1.0	μA		
Gate-Source Cutoff Current	IGSS	VGS = ±8 V, VDS = 0 V			±10	μA		
Gate Threshold Voltage	Vth	ID = 1.0 mA, VDS = 10.0 V	0.4	0.85	1.3	V		
Drain Resistance (ON) 1	RDS(ON) 1	ID = 2.0 A, VGS = 4.5 V		15	21	mΩ		
Drain Resistance (ON) 2	RDS(ON) 2	ID = 2.0 A, VGS = 3.7 V		18	25	mΩ		
Drain Resistance (ON) 3	RDS(ON) 3	ID = 1.0 A, VGS = 2.5 V		22	33	mΩ		
Forward Transfer Admittance	Yfs	ID = 1.0 A, VDS = 10 V	3.0			S		
Small-Signal Short-Circuit Input Capacitance	Ciss	VDS = 10 V, VGS = 0 V, f = 1 MHz		1500		pF		
Small-Signal Short-Circuit Output Capacitance	Coss	VDS = 10 V, VGS = 0 V, f = 1 MHz		110		pF		
Small-Signal Reverse Transfer Capacitance	Crss	VDS = 10 V, VGS = 0 V, f = 1 MHz		100		pF		
Turn-on Delay Time	td(on) *1	VDD = 10 V, VGS = 0 to 4 V, ID = 1.0 A		14		ns		
Rise Time	tr *1	VDD = 10 V, VGS = 0 to 4 V, ID = 1.0 A		18		ns		
Turn-off Delay Time	td(off) *1	VDD = 10 V, VGS = 4 to 0 V, ID = 1.0 A		130		ns		
Fall Time	tf *1	VDD = 10 V, VGS = 4 to 0 V, ID = 1.0 A		80		ns		
Note: Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 Measuring methods for transistors.								
*1 See test circuit								
*2 Packing Embossed TX Type (Thermo-compression sealing)								
*3 In case of being attached to 300mm ² area or more of copper foil of a drain on a glass epoxy board (25.4 x 25.4 x 0.8 mm).Absolute maximum rating of PD								
Internally connected circuit								
1.Source1 2.Gate1 3.Source2 4.Gate2 5.Drain 6.Drain 7.Drain 8.Drain								
2008.02.26								
Established	Revised							

Product Specification
Type Number : MTMC8E280 L B F
*2

Test circuit



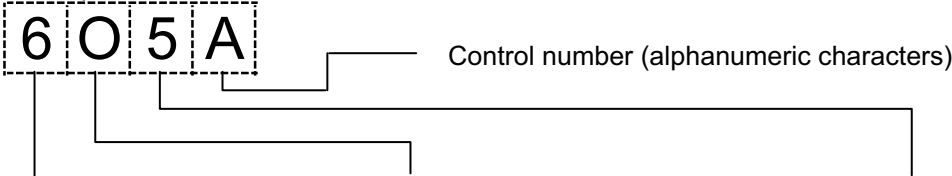
Product Specification
Mark Indication
Type Number : M T M C 8 E 2 8 0 L B F
*2



The actual font of product symbol may differ slightly from the font shown in this specification.

- Connection
- | | |
|-----------|---------|
| 1.Source1 | 5.Drain |
| 2.Gate1 | 6.Drain |
| 3.Source2 | 7.Drain |
| 4.Gate2 | 8.Drain |

« Example of indication of date code »



The last digit of year

AD2006 → 6
AD2007 → 7
AD2008 → 8
AD2009 → 9
AD2010 → 0

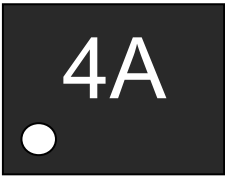
The month of assembly

1~9月 / Jan. to Sep. → 1~9 / 1 to 9
10月 / Oct. → O
11月 / Nov. → N
12月 / Dec. → D

The day of assembly

Day	Symbol	Day	Symbol	Day	Symbol
1	1	11	A	21	M
2	2	12	B	22	N
3	3	13	C	23	P
4	4	14	D	24	R
5	5	15	E	25	S
6	6	16	F	26	T
7	7	17	H	27	U
8	8	18	J	28	V
9	9	19	K	29	W
10	0	20	L	30	X
				31	Y

・ Factory distinction mark

KUMAMOTO			
WMini8 - F1			
			

※ White parts are treated by laser mark.

2008.02.26		
Established	Revised	