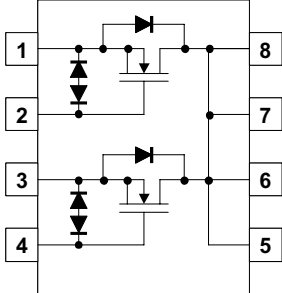
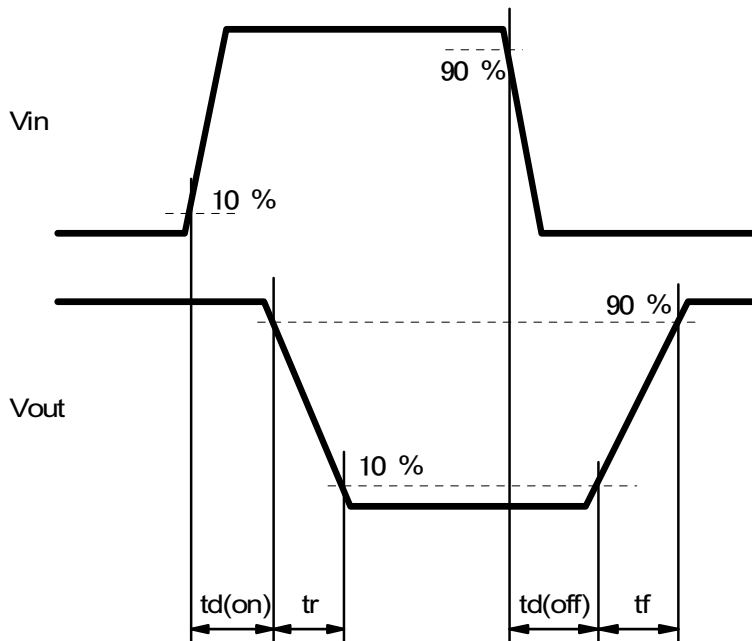
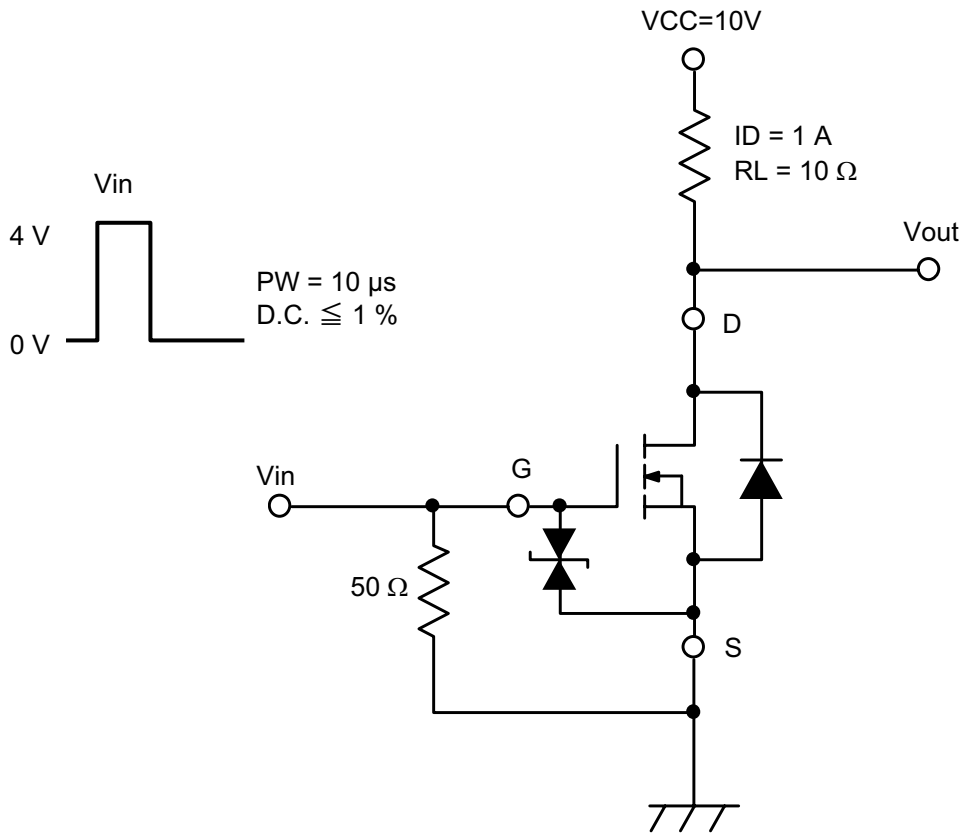


Product Specification		Prepared by		Checked by		Applied by		Established by	
Type Number : M T M C 8 E 2 8 0 L B F *2		S.Miyata		M.Fujisawa		H.Shidooka		K.Komichi	
Type	Silicon Field Effect Transistors								
Application	Li-ion Battery								
Structure	Dual N-Channel MOS Type								
Outline	WMini8 - F1			Marking			4A		
Absolute Maximum Ratings	VDSS	VGSS	ID	IDp	*3 PD	Tch	Tstg		
	20	±10	7.0	42	1.0	150	-55 to +150		
	(V)	(V)	(A)	(A)	(W)	(°C)	(°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			
<p>Note: Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 Measuring methods for transistors.</p> <p>*1 See test circuit</p> <p>*2 Packing Embossed TX Type (Thermo-compression sealing)</p> <p>*3 In case of being attached to 300mm² 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</p>									
			<p>Internally connected circuit</p> <p>1.Source1 2.Gate1 3.Source2 4.Gate2 5.Drain 6.Drain 7.Drain 8.Drain</p> 						
2008.02.26									
Established	Revised								

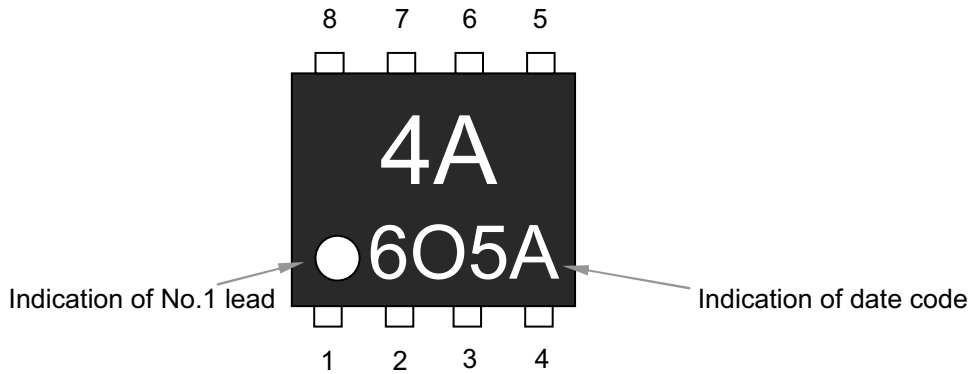
Product Specification
 Type Number : MTMC8E280 LBF
*2

Test circuit



2008.02.26	
Established	Revised

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

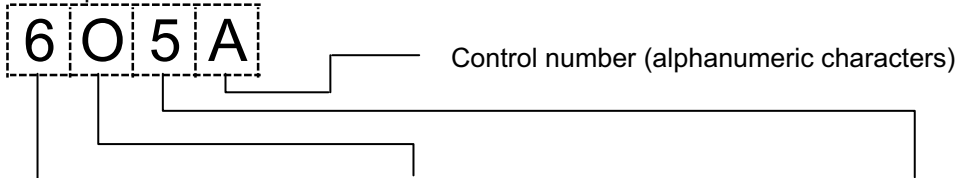


The actual font of product symbol may differ slightly from the font shown in this specification.

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

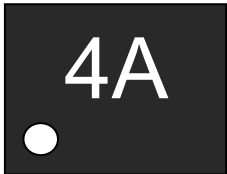
The month of assembly

- 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