

### Descriptions

N-channel Double MOSFET in a SOT23-6 Plastic Package.

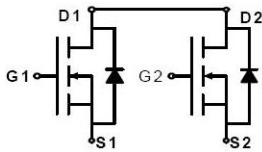
### Features

advanced trench technology to provide excellent  $R_{DS(on)}$ , low gate charge and operation with gate voltages as low as 2.5V.

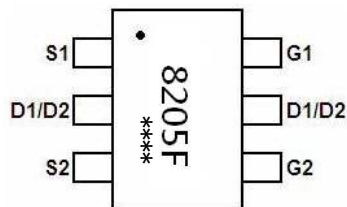
### Applications

Use as a Battery protection , Switching application.

### Equivalent Circuit



### Pinning



### Marking

Marking	8205F
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## Absolute Maximum Ratings(Ta=25 °C)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	$V_{DS}$	20	V
Drain Current - Continuous	$I_D(Ta=25^{\circ}C)$	6.0	A
Drain Current - Continuous	$I_D(Ta=100^{\circ}C)$	4.8	A
Drain Current – Pulsed	$I_{DM}$	20	A
Gate-Source Voltage	$V_{GS}$	$\pm 12$	V
Maximum Power Dissipation	$P_D(Ta=25^{\circ}C)$	1.14	W
Thermal Resistance Junction-to-Ambient	$R_{\theta JA}$	110	$^{\circ}C/W$
Junction Temperature	$T_j$	150	$^{\circ}C$
Storage Temperature Range	$T_{stg}$	-55 ~ 150	$^{\circ}C$

## Electrical Characteristics(Ta=25°C)

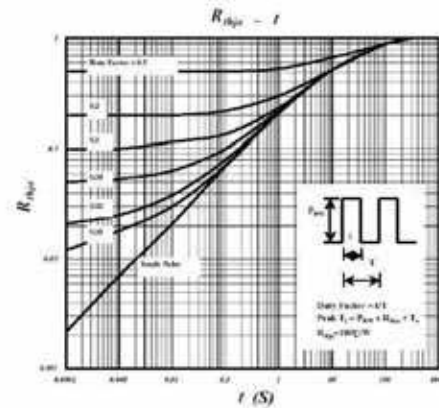
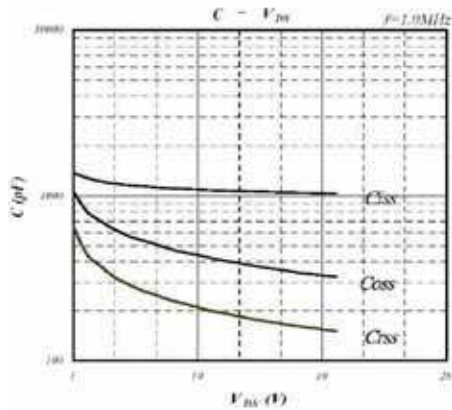
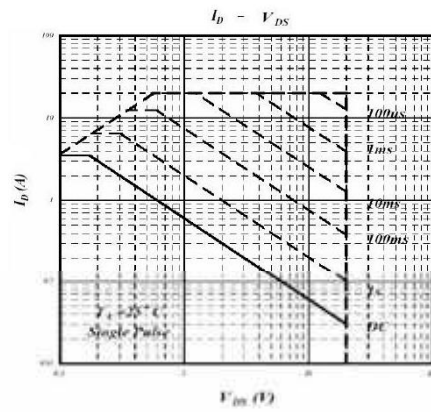
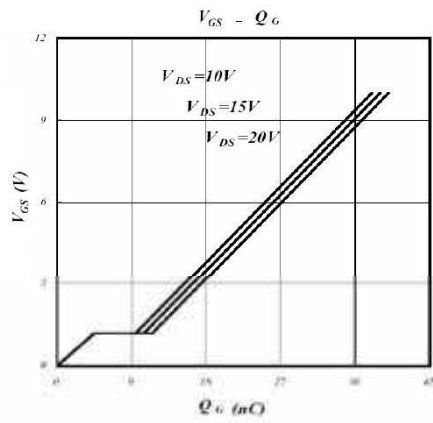
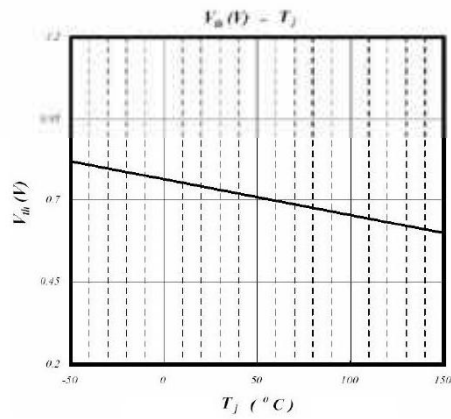
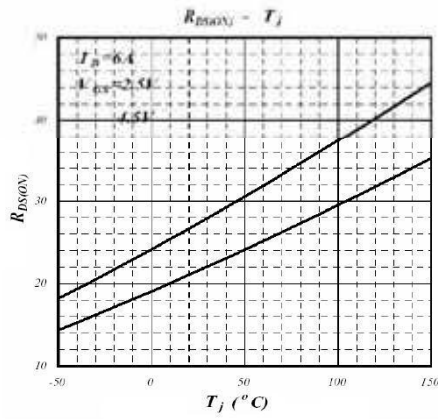
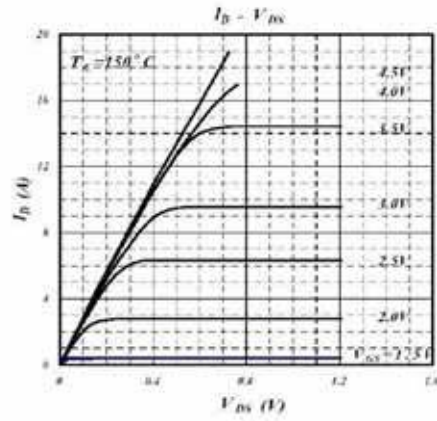
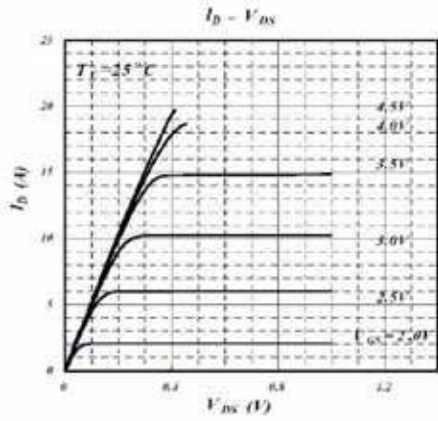
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	$BV_{DSS}$	$V_{GS}=0V$ $I_D=250\mu A$	20			V
Drain-Source Leakage Current( $T_j=25^{\circ}C$ )	$I_{DSS}$	$V_{DS}=20V$ $V_{GS}=0V$			1	$\mu A$
Drain-Source Leakage Current( $T_j=70^{\circ}C$ )	$I_{DSS}$	$V_{DS}=16V$ $V_{GS}=0V$			25	$\mu A$
Gate-Source Leakage Current	$I_{GSS}$	$V_{GS}=\pm 10V$ $V_{DS}=0V$			$\pm 100$	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250\mu A$	0.5		1.2	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=4.5V$ $I_D=1.0A$		11.5	17	m $\Omega$
		$V_{GS}=2.5V$ $I_D=1.0A$		16.5	22	m $\Omega$
		$V_{GS}=4.5V$ $I_D=6.0A$		14	20	m $\Omega$
		$V_{GS}=2.5V$ $I_D=5.2A$		17	24	m $\Omega$
Forward Transconductance	$g_{FS}$	$V_{DS}=5.0V$ $I_D=4.0A$	5			S
Forward On Voltage	$V_{SD}$	$V_{GS}=0V$ $I_S=1.7A$			1.2	V
Input Capacitance	$C_{iss}$	$V_{DS}=20V$ $V_{GS}=0V$ $f=1.0MHz$		1035		pF
Output Capacitance	$C_{oss}$			320		pF
Reverse Transfer Capacitance	$C_{rss}$			150		pF
Turn-on Delay Time	$t_{d(on)}$	$V_{DS}=10V$ $I_D=1A$ $V_{GS}=5V$ $R_G=6\Omega$ $R_D=10\Omega$		30		ns
Rise Time	$t_r$			70		ns
Turn-off Delay Time	$t_{d(off)}$			40		ns
Fall Time	$t_f$			65		ns

Notes:

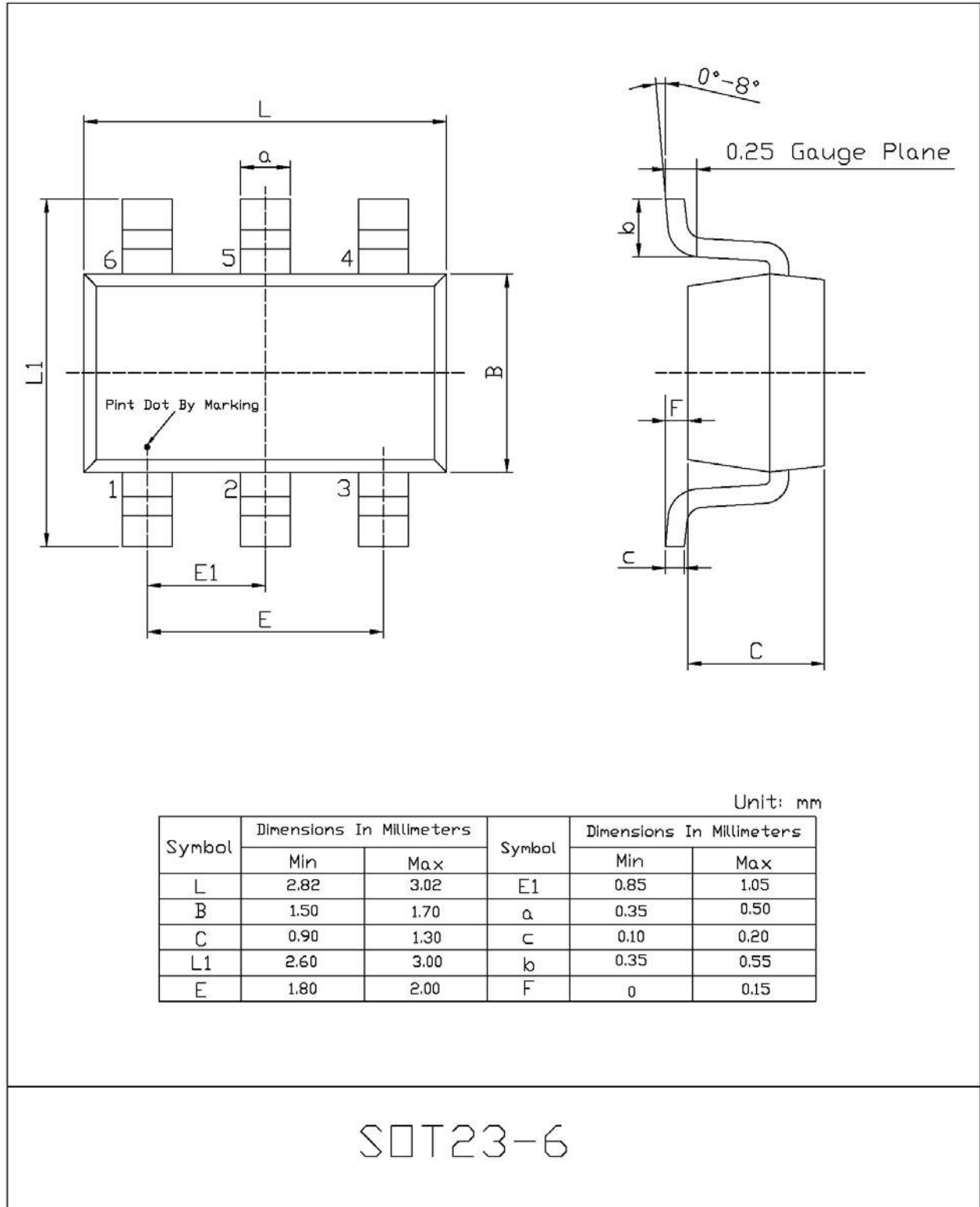
1. Surface Mounted on FR4 Board,  $t \leq 10$  sec.

2. Pulse Test: Pulse Width  $\leq 300\mu s$ , Duty Cycle  $\leq 2\%$ .

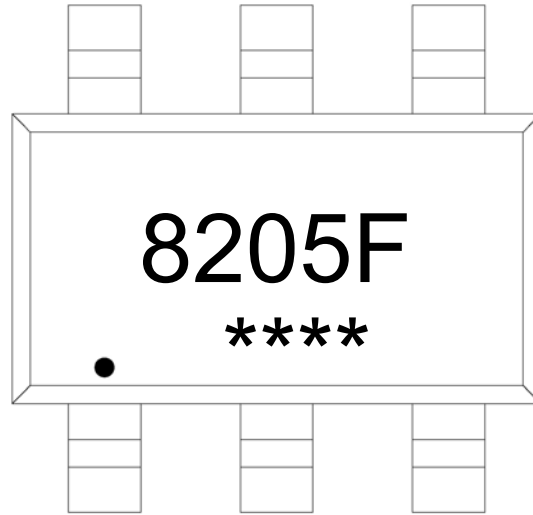
# RATING AND CHARACTERISTICS CURVES (RM8205F)



## Package Dimensions



## Marking Instructions

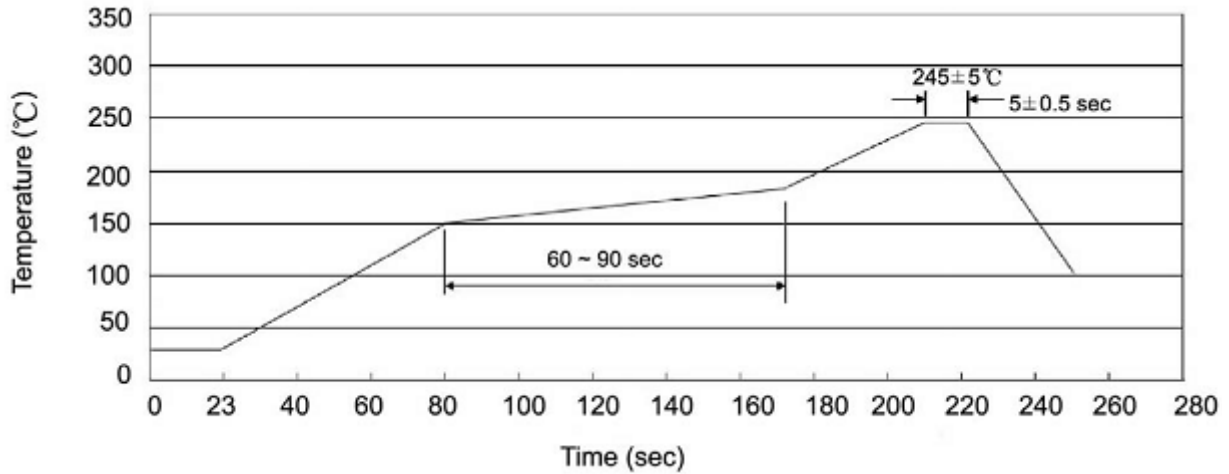


Note:

8205F: Product Type Code.

\*\*\*\*: Date code çhange with manufacturing date.

### Temperature Profile for IR Reflow Soldering(Pb-Free)



**Notes:**

1. Preheating: 25~150 °C, Time: 60~90sec.
2. Peak Temp.: 245 ± 5°C, Duration: 5 ± 0.5sec.
3. Cooling Speed: 2~10°C/sec.

### Resistance to Soldering Heat Test Conditions

Temp: 260 ± 5°C    Time: 10 ± 1 sec

### Packaging SPEC.

#### REEL

Package Type	Units					Dimension (unit: mm <sup>3</sup> )		
	Units/Reel	Reels/Inner Box	Units/Inner Box	Inner Boxes/Outer Box	Units/Outer Box	Reel	Inner Box	Outer Box
SOT23-5/6	3,000	10	30,000	4	120,000	7" x8	210×205×205	445×230×435

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