



Micro Commercial Components



Micro Commercial Components  
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# MCCD2005

## Features

- Advanced trench MOSFET process technology
- Ultra low on-resistance with low gate charge
- Halogen free available upon request by adding suffix "-HF"
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Marking:2005

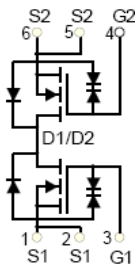
## Maximum Ratings @ 25°C Unless Otherwise Specified

Symbol	Parameter	Rating	Unit
V <sub>DS</sub>	Drain-source Voltage	20	V
I <sub>D</sub>	Drain Current-Continuous	8	A
I <sub>DM</sub>	Pulsed Drain Current (note1)	30	A
V <sub>GS</sub>	Gate-source Voltage	± 12	V
R <sub>θJA</sub>	Thermal Resistance Junction to Ambient	125	°C/W
T <sub>J</sub>	Operating Junction Temperature	-55 to +150	°C
T <sub>STG</sub>	Storage Temperature	-55 to +150	°C

### Notes:

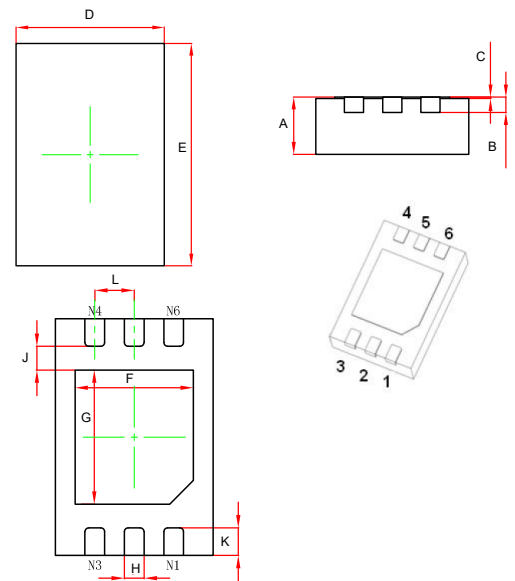
1. Repetitive Rating: Pulse width limited by junction temperature.

### Equivalent Circuit



## Dual N-Channel Power MOSFET

## DFN2030-6



DIM	Dimensions				NOTE
	INCHES		MM		
	MIN	MAX	MIN	MAX	
A	0.028	.032	0.700	0.800	
B	0.008REF.		0.203REF.		
C	0.000	0.002	0.000	0.050	
D	0.077	0.081	1.950	2.050	
E	0.116	0.120	2.950	3.050	
F	0.055	0.063	1.400	1.600	
G	0.063	0.071	1.600	1.800	
H	0.008	0.012	0.200	0.300	
J	0.008	---	0.200	---	
K	0.018	0.026	0.300	0.400	
L	0.020TYP.		0.500TYP.		

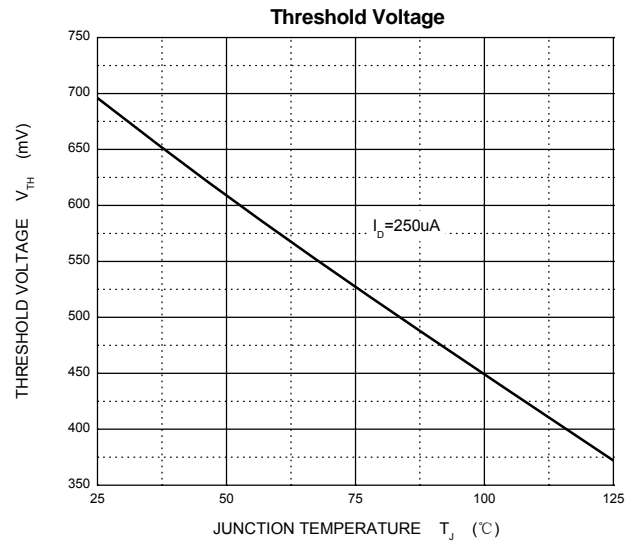
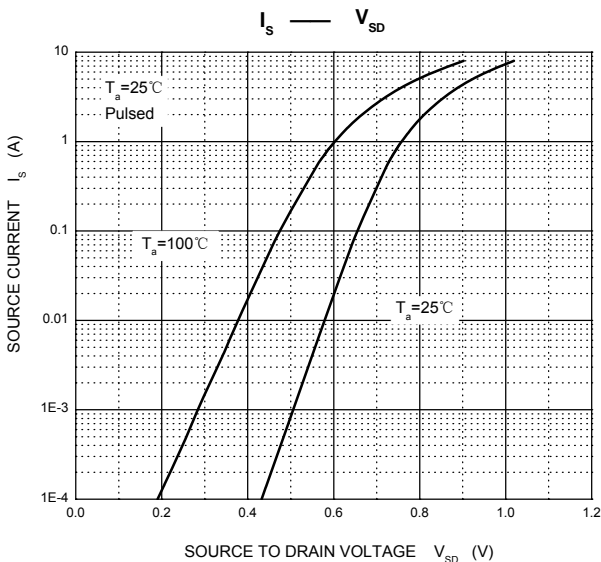
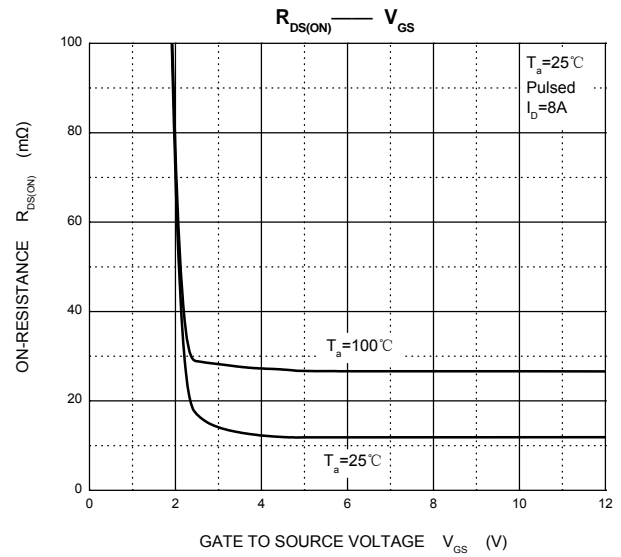
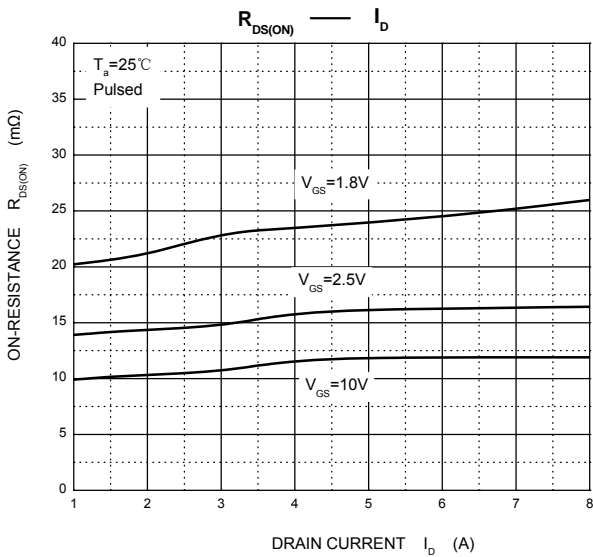
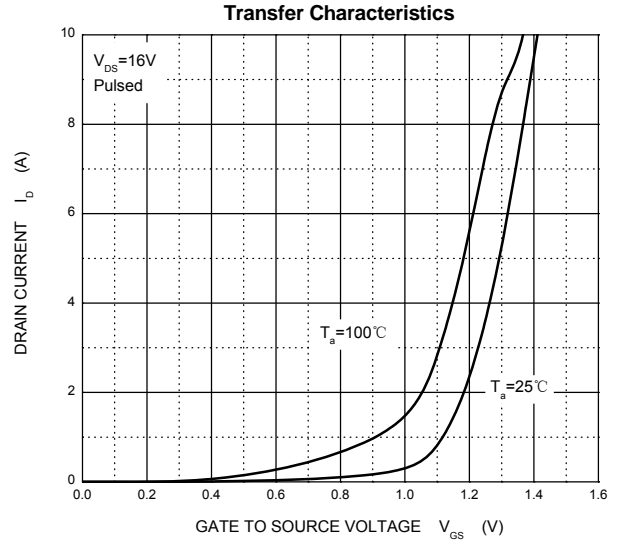
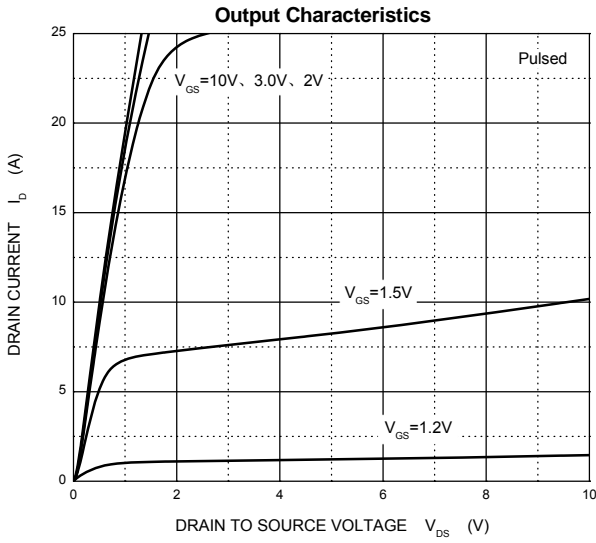
**ELECTRICAL CHARACTERISTICS(T<sub>a</sub>=25°C unless otherwise specified)**

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
<b>STATIC PARAMETERS</b>						
Drain-source breakdown voltage	V <sub>(BR)DSS</sub>	V <sub>GS</sub> = 0V, I <sub>D</sub> =250μA	20			V
Zero gate voltage drain current	I <sub>DSS</sub>	V <sub>DS</sub> =16V, V <sub>GS</sub> = 0V			10	μA
Gate-body leakage current	I <sub>GSS</sub>	V <sub>GS</sub> =±10V, V <sub>DS</sub> = 0V			±10	μA
Gate threshold voltage (note 1)	V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =250μA	0.5		1	V
Drain-source on-resistance (note 1)	R <sub>DS(on)</sub>	V <sub>GS</sub> =10V, I <sub>D</sub> =8A			13	mΩ
		V <sub>GS</sub> =4.5V, I <sub>D</sub> =5A			14	mΩ
		V <sub>GS</sub> =3.8V, I <sub>D</sub> =5A			15.5	mΩ
		V <sub>GS</sub> =2.5V, I <sub>D</sub> =4A			19	mΩ
		V <sub>GS</sub> =1.8V, I <sub>D</sub> =3A			27	mΩ
Forward tranconductance (note 1)	g <sub>FS</sub>	V <sub>DS</sub> =5V, I <sub>D</sub> =8A		36		S
Diode forward voltage(note 1)	V <sub>SD</sub>	I <sub>S</sub> =1A, V <sub>GS</sub> = 0V			1	V
<b>DYNAMIC PARAMETERS (note 2)</b>						
Input Capacitance	C <sub>iSS</sub>	V <sub>DS</sub> =10V, V <sub>GS</sub> =0V, f =1MHz		1800		pF
Output Capacitance	C <sub>oSS</sub>			230		pF
Reverse Transfer Capacitance	C <sub>rSS</sub>			200		pF
Total gate charge	Q <sub>g</sub>	V <sub>DS</sub> =10V, V <sub>GS</sub> =4.5V, I <sub>D</sub> =8A		17.9		nC
Gate-source charge	Q <sub>gs</sub>			1.5		nC
Gate-drain charge	Q <sub>gd</sub>			4.7		nC
<b>SWITCHING PARAMETERS(note 2)</b>						
Turn-on delay time	t <sub>d(on)</sub>	V <sub>GS</sub> =10V, V <sub>DD</sub> =10V, R <sub>L</sub> =1.2Ω, R <sub>GEN</sub> =3Ω		2.5		ns
Turn-on rise time	t <sub>r</sub>			7.2		ns
Turn-off delay time	t <sub>d(off)</sub>			49		ns
Turn-off fall time	t <sub>f</sub>			10.8		ns

**Notes :**

1. Pulse Test : Pulse width≤300μs, duty cycle≤0.5%.
2. Guaranteed by design, not subject to production testing.

# Typical Characteristics





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## Ordering Information :

Device	Packing
Part Number-TP	Tape&Reel: 3Kpcs/Reel

Note : Adding "-HF" suffix for halogen free, eg. Part Number-TP-HF

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- Подбор аналогов;
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- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

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