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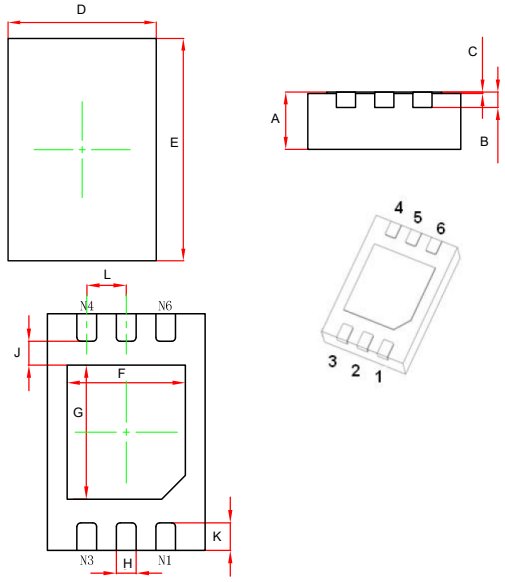
MCCD2004

Dual N-Channel Power MOSFET

Features

- Advanced trench MOSFET process technology
- Halogen free available upon request by adding suffix "-HF"
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Marking:2004

DFN2030-6



Dimensions					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.028	.032	0.700	0.800	
B	0.008REF.		0.203REF.		
C	0000	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.		

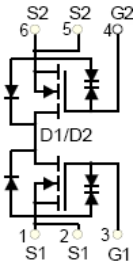
Maximum Ratings @ 25°C Unless Otherwise Specified

Symbol	Parameter	Rating	Unit
V_{DS}	Drain-source Voltage	20	V
I_D	Drain Current-Continuous	10	A
I_{DM}	Pulsed Drain Current (note1)	40	A
V_{GS}	Gate-source Voltage	± 12	V
$R_{\theta JA}$	Thermal Resistance Junction to Ambient	125	℃/W
T_J	Operating Junction Temperature	-55 to +150	℃
T_{STG}	Storage Temperature	-55 to +150	℃

Notes:

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

Equivalent Circuit



ELECTRICAL CHARACTERISTICS(T_a=25℃ unless otherwise specified)

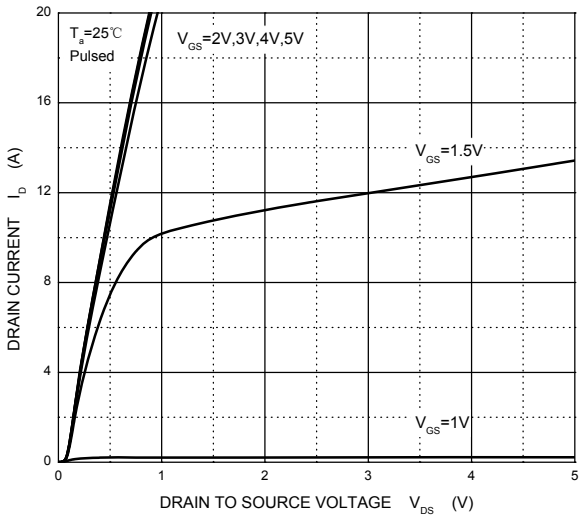
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
STATIC PARAMETERS						
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D =250μA	20			V
Zero gate voltage drain current	I_{DSS}	V_{DS} =16V,V_{GS} = 0V			1	μA
Gate-body leakage current	I_{GSS}	V_{GS} =±10V, V_{DS} = 0V			±10	μA
Gate threshold voltage (note 1)	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA	0.5		1	V
Drain-source on-resistance (note 1)	$R_{DS(on)}$	V_{GS} =10V, I_D =8A			10	mΩ
		V_{GS} =4.5V, I_D =5A			12	mΩ
		V_{GS} =3.8V, I_D =5A			13	mΩ
		V_{GS} =2.5V, I_D =4A			17	mΩ
Forward tranconductance (note 1)	g_{FS}	V_{DS} =5V, I_D =8A		36		S
Diode forward voltage(note 1)	V_{SD}	I_S=1A, V_{GS} = 0V			1	V
DYNAMIC PARAMETERS (note 2)						
Input Capacitance	C_{iss}	V_{DS} =10V,V_{GS} =0V,f =1MHz		1955		pF
Output Capacitance	C_{oss}			220		pF
Reverse Transfer Capacitance	C_{rss}			180		pF
Total gate charge	Q_g	V_{DS} =10V,V_{GS} =4.5V,I_D =8A		18.5		nC
Gate-source charge	Q_{gs}			2		nC
Gate-drain charge	Q_{gd}			5.1		nC
SWITCHING PARAMETERS(note 2)						
Turn-on delay time	$t_{d(on)}$	V_{GS}=10V,V_{DD}=10V, R_L=1.2Ω,R_{GEN}=3Ω		3		ns
Turn-on rise time	t_r			7.4		ns
Turn-off delay time	$t_{d(off)}$			55		ns
Turn-off fall time	t_f			12.3		ns

Notes :

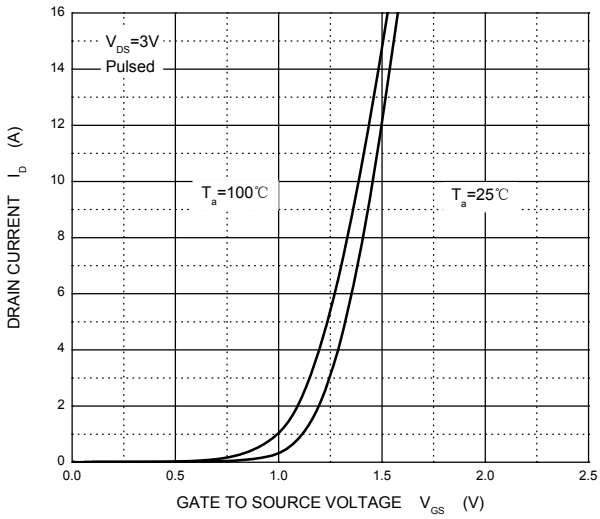
1. Pulse Test : Pulse width≤300μs, duty cycle≤0.5%.
2. Guaranteed by design, not subject to production testing.

Typical Characteristics

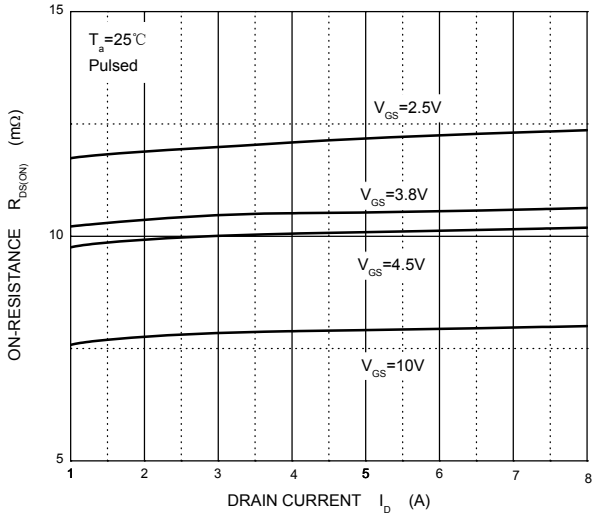
Output Characteristics



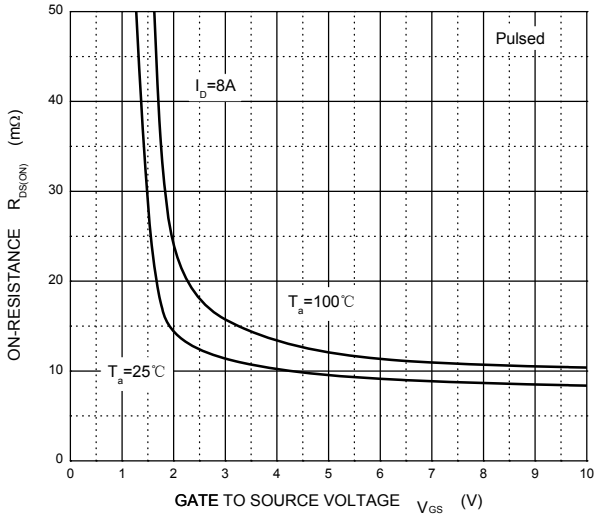
Transfer Characteristics



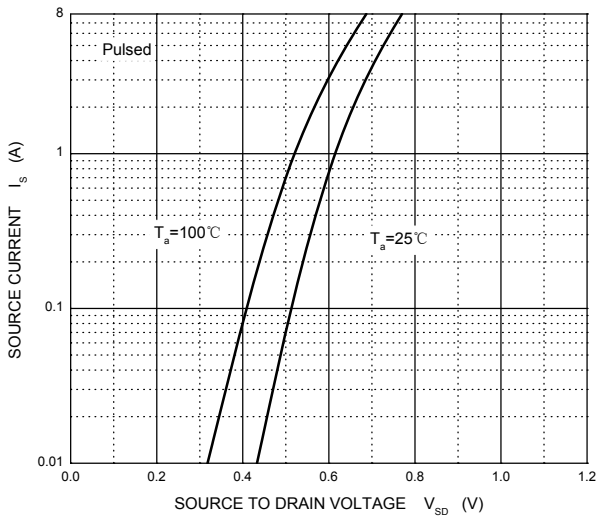
RDS(ON) —— ID



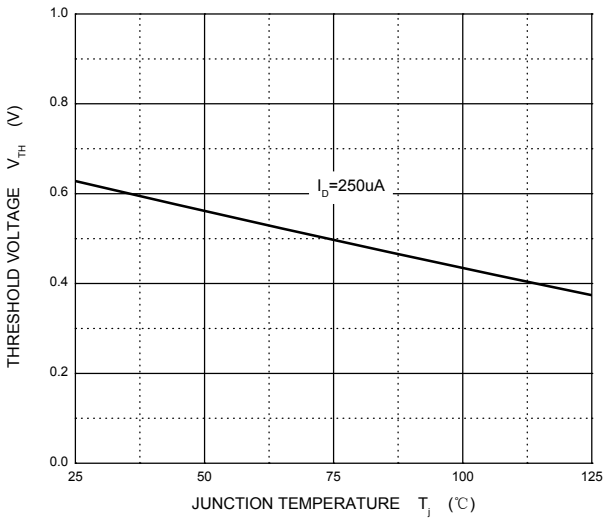
RDS(ON) —— VGS



IS —— VSD



Threshold Voltage



Micro Commercial Components

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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