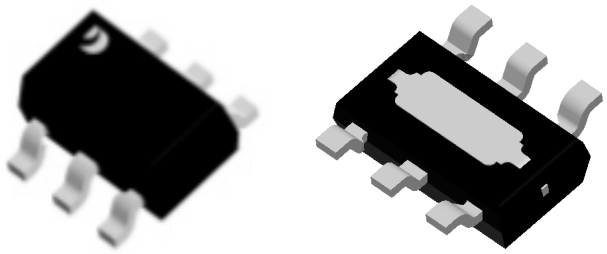
Dual N-channel Enhancement Mode Power MOSFET

Features



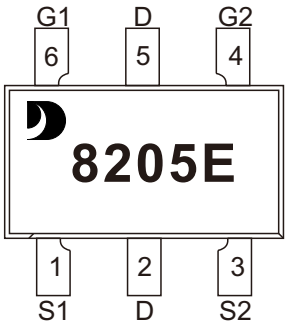
- 20V, 5A

  RDS(ON)<26mΩ @ VGS=4. 5V

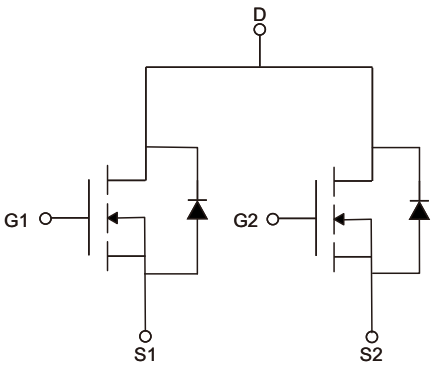
  RDS(ON)<26mΩ @ VGS=2. 5V
- Advanced Trench Technology
- Provide Excellent RDS(ON) and Low Gate Charge
- Lead free product is acquired

Application

- Load Switch
- PWM Application
- Power management



Marking and pin Assignment



Schematic Diagram

Absolute Maximum Ratings (T_A=25℃ unless otherwise specified)

Symbol	Parameter		Max	Units
V_{DSS}	Drain-Source Voltage		20	V
V_{GSS}	Gate-Source Voltage		±10	V
I_D	Continuous Drain Current	T_A=25℃	5	A
		T_A=100℃	3.2	A
I_{DM}	Pulsed Drain Current[Note1]		20	A
P_D	Power Disspation	T_A=25℃	1.5	W
$R_{\theta JA}$	Thermal Resistance , Junction to Ambient		51.8	℃/W
T_J,T_{STG}	Operating and Storage Temperature Range		-50 to +150	℃

Note: 1. Repetitive Rating : Pulse Width Limited by Maximumm Junction Temperature

Electrical Characteristics

Ratings at 25 ℃ ambient temperature unless otherwise specified.

Parameter	Symbol	Conditions	Minimum	Typical	Maximum	Units
Drain-Source Breakdown Voltage	B_{VDSS}	V_{GS}=0V,I_D=250uA	20	21		V
Static Drain-SourceOn-Resistance	$R_{DS(on)}$(FT)	V_{GS}=4.5V,I_D=4.0A		20	25	mΩ
		V_{GS}=2.5V,I_D=3.0A		26	36	mΩ
Gate Threshold Voltage	$V_{GS(th)}$	V_{GS}=V_{DS},I_D=250uA	0.45	0.7	1.1	V
Gate-to-Source Leakage Current	I_{DSS}	V_{DS}=20V,V_{GS}=0V			1	uA
Gate-Body Leakage Current	I_{GSS}	V_{DS}=0V,V_{GS}=±10V			±100	nA
Input Capacitance	C_{iss}	V_{DS}=10V,V_{GS}=0V f=1.0MHz		800		pF
Output Capacitance	C_{oss}			155		pF
Reverse Transfer Capacitance	C_{rss}			125		pF
Total Gate Charge	Q_g	V_{DS}=10V,V_{GS}=4.5V I_D=3A		11		nC
Gate-Source Charge	Q_{gs}			2.3		nC
Gate-Drain(”Miller”) Charge	Q_{gd}			2.5		nC
Turn-on Delay Time	$t_{d(on)}$	V_{DS}=10V,V_{GS}=4.5V I_D=3A, R_{GEN}=3Ω		18		ns
Turn-on Rise Time	t_r			5		ns
Turn-o ffDelay Time	$t_{d(off)}$			43		ns
Turn-o ffFall Time	t_f			20		ns

Typical Electrical and Thermal Characteristics

Fig.1 Capacitance vs.Drain-Source Voltage

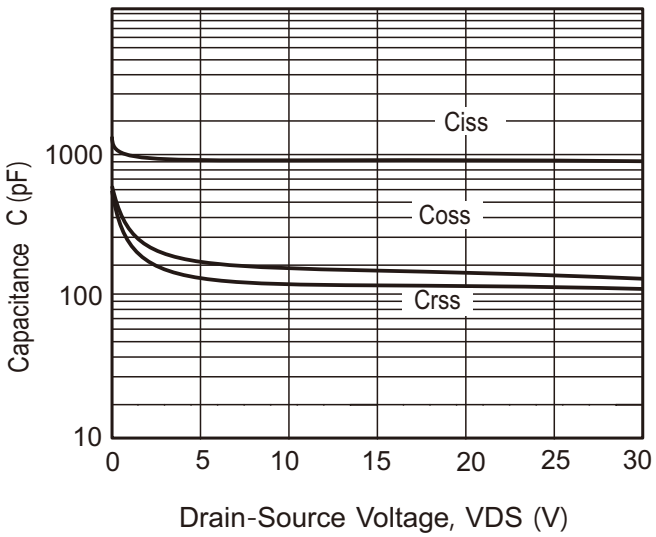


Fig.2 Gate Charge Vs.Gate-Source Voltage

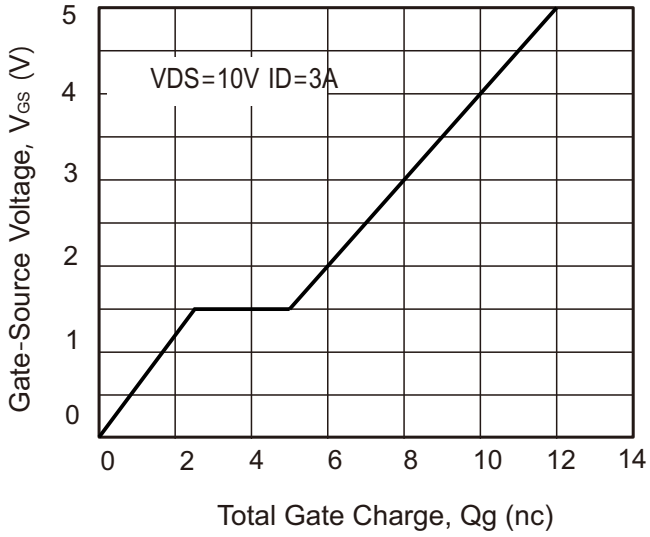


Fig 3 Output Characteristics

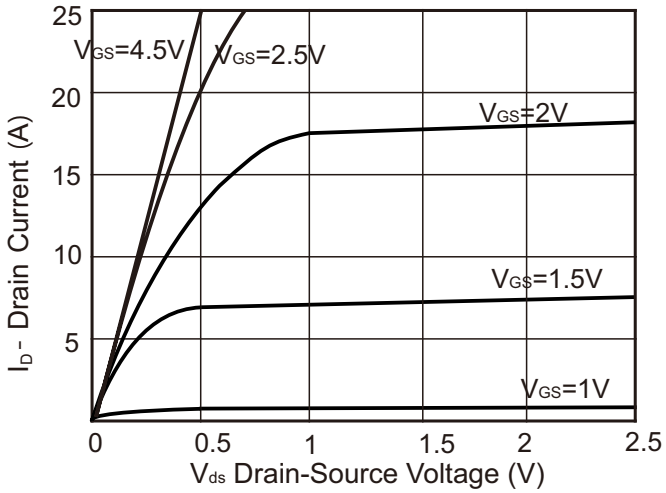


Fig 4 Drain-Source On-Resistance

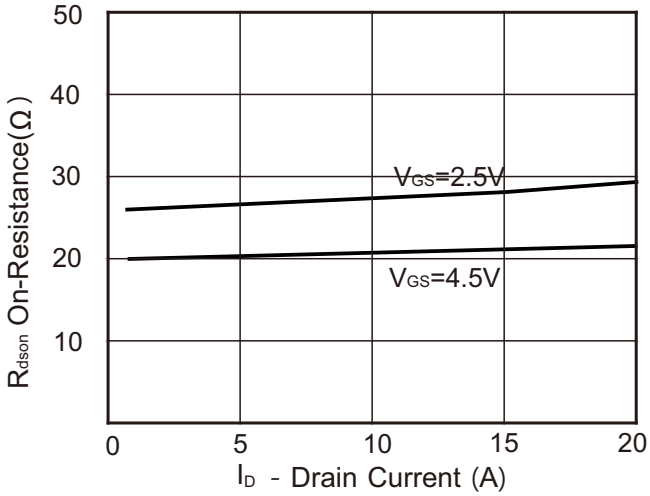


Fig 5 Transfer Characteristics

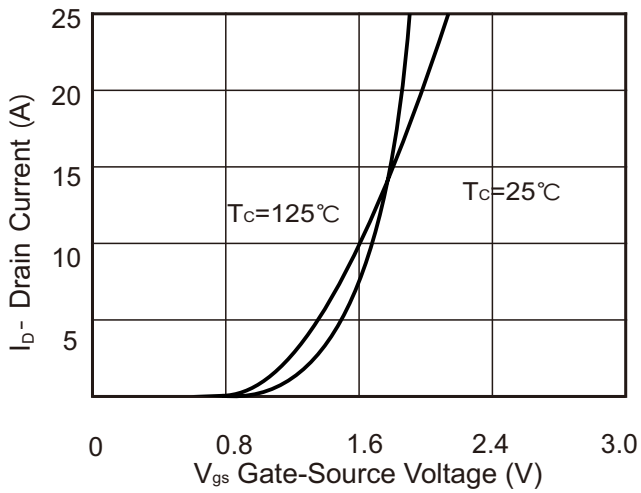


Fig 6 Source- Drain Diode Forward

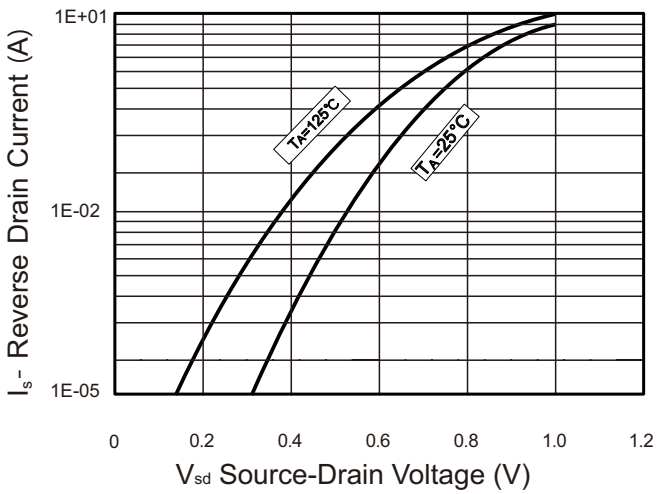


Fig 7 Safe Operation Area

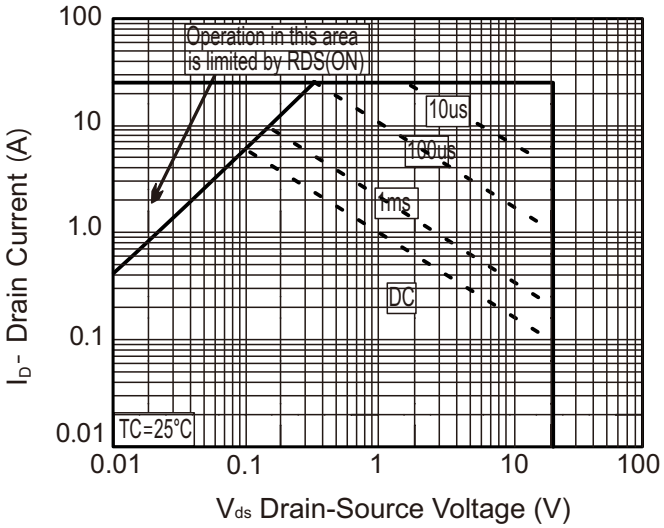


Fig 8 Normalized Breakdown Voltage vs . Junction Temperature

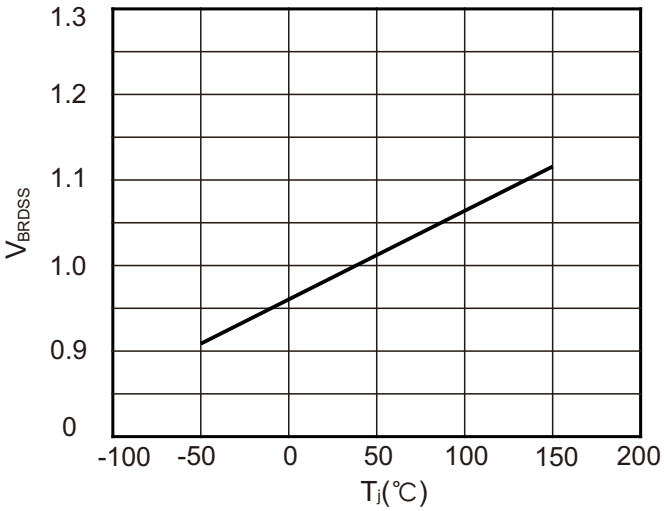


Fig 9 Normalized on Resistance vs . Junction Temperature

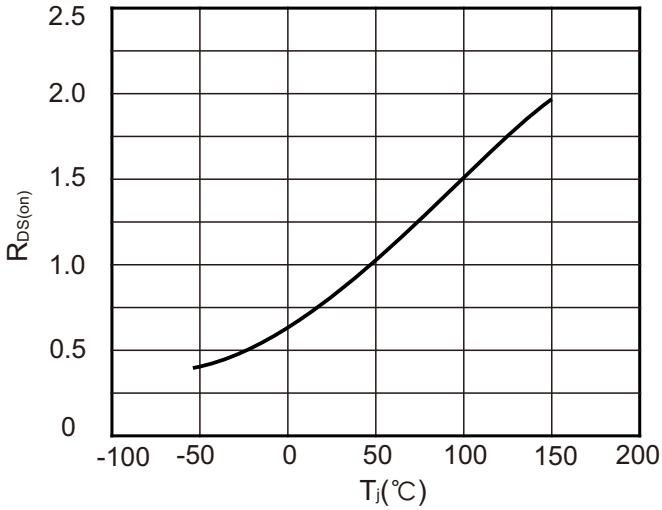
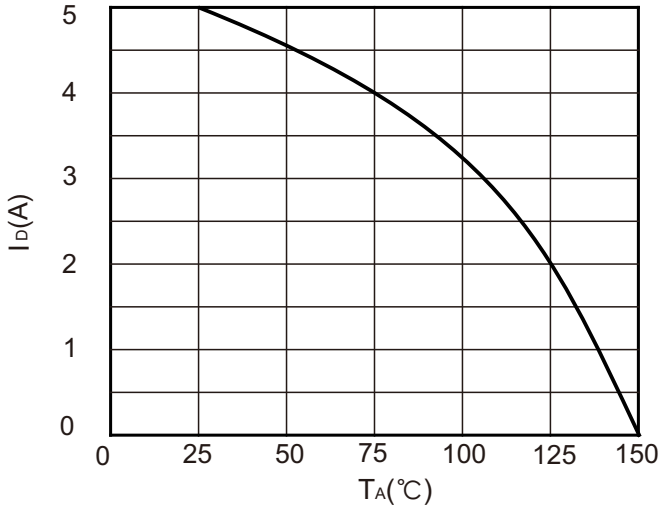
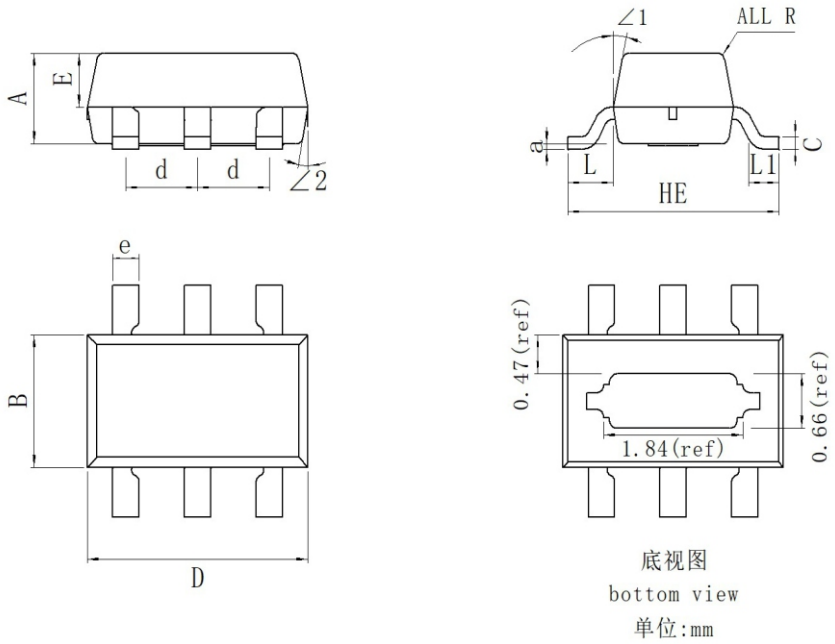


Fig 9 Maximmum Continuous Drain Current vs . Ambient Temperature



PACKAGE OUTLINE

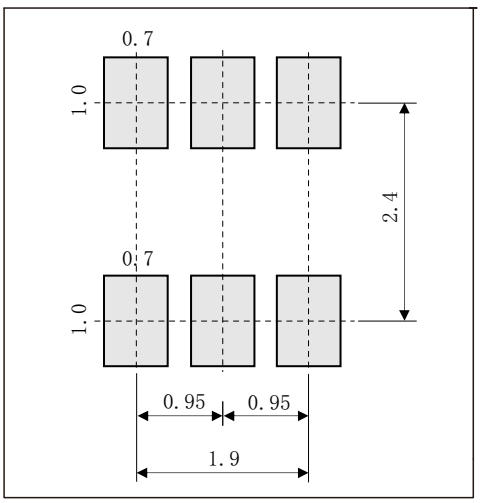
Plastic surface mounted package; 6 leads



底视图
bottom view
单位:mm

Unit		A	B	C	HE	D	d	E	e	L	L1	a	R	∠1	∠2
mm	max	1.05	1.80	0.20	2.90	3.12	1.00	0.65	0.40	0.70	0.60	0.2 (ref)	R0.1 (ref)	12°	10°
	typ	0.95	1.60	0.15	2.80	2.92	0.95	0.55	0.35	0.60	/				
	min	0.85	1.40	0.10	2.70	2.72	0.90	0.45	0.30	0.50	0.20				
mil	max	41	71	8	114	123	39	26	16	28	24	8 (ref)	R4 (ref)		
	typ	37	63	6	110	115	37	22	14	24	/				
	min	33	55	4	106	107	35	18	12	20	8				

The recommended mounting pad size



Marking

Type number	Marking code
NM8205E	8205E

文件履历表

序号	制/修订日期	生效日期	版次	修订内容	变更原因	制/修订人	备注
01	2022.5.31	2022.5.31	Rev 1.1	初版制定	/	陶倩	

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