

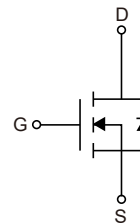
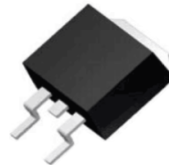
1.Features

- $V_{DS(V)}=100V$
- $I_D=120A(V_{GS}=10V)$
- $R_{DS(ON)}<2.7m\Omega(V_{GS}=10V)$
- Excellent gate charge x $R_{(ON)}$ product (FOM)
- Very low on-resistance $R_{DS(ON)}$
- Ideal for high-frequency switching and synchronous rectification

2.Pinning information

Pin	Symbol	Description
1	G	GATE
2	D	DRAIN
3	S	SOURCE

TO-263



3.Absolute Maximum Ratings $T_J=25^{\circ}C$

Parameter	Symbol	Conditions	Value	Units
Continuous drain current	I_D	$T_C=25^{\circ}C^{2)}$	120	A
		$T_C=100^{\circ}C$	120	A
Pulsed drain current ²⁾	$I_{D,pulse}$	$T_C=25^{\circ}C$	480	A
Avalanche current, single pulse	E_{AS}	$I_D=100A, R_{GS}=25\Omega$	1000	mJ
Gate source voltage	V_{GS}		± 20	V
Power dissipation	P_{tot}	$T_C=25^{\circ}C$	300	W
Storage temperature	T_J, T_{STG}		-55 to 175	$^{\circ}C$
IEC cimatic category; DIN IEC 68-1			55/175/56	



4. Electrical Characteristic (T_J=25°C unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Thermal resistance, junction -case	R _{thJC}				0.5	K/W
Thermal resistance, junction - ambient	R _{thJA}	minimal footprint			62	K/W
		6 cm ² cooling area ³⁾			40	K/W
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} =0V, I _D =1mA	100			V
Gate threshold voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =275μA	2	2.7	3.5	V
Zero gate voltage drain current	I _{DSS}	V _{DS} =100V, V _{GS} =0V, T _J =25°C		0.1	1	μA
		V _{DS} =100V, V _{GS} =0V, T _J =125°C		10	100	μA
Gate-source leakage current	I _{GSS}	V _{GS} =20V, V _{DS} =0V		1	100	nA
Drain-source on-state resistance	R _{DS(ON)}	V _{GS} =10V, I _D =100A		2.3	2.7	mΩ
		V _{GS} =6V, I _D =50A		2.8	4.5	mΩ
Gate resistance	R _G			1.9		Ω
Transconductance	g _{FS}	V _{DS} >2 I _D R _{DS(ON)max} , I _D =100A	94	188		S
Input capacitance	C _{iss}	V _{GS} =0V, V _{DS} =50V, f=1MHz		11100	14800	pF
Output capacitance	C _{oss}			1940	2580	pF
Reverse transfer capacitance	C _{rss}			69		pF
Turn-on delay time	t _{D(on)}	V _{DD} =50V, V _{GS} =10V I _D =100A, R _{G,ext} =1.6Ω		34		ns
Rise time	t _r			58		ns
Turn-off delay time	t _{D(off)}			84		ns
Fall time	t _f			28		ns
Gate to source charge	Q _{gs}	V _{DD} =50V, I _D =100A V _{GS} =0 to 10V		48		nC
Gate to drain charge	Q _{gd}			27		nC
Switching charge	Q _{SW}			42		nC
Gate charge total	Q _g			155	206	nC
Gate plateau voltage	V _{plateau}			4.3		V



Output charge	Q_{oss}	$V_{DD}=50V, V_{GS}=0V$		205	273	nC
Diode continuous forward current	I_S	$T_C=25^{\circ}C$			120	A
Diode pulse current	$I_{S,pulse}$				480	A
Diode forward voltage	V_{SD}	$V_{GS}=0V, I_F=100A, T_J=25^{\circ}C$		1	1.2	V
Reverse recovery time	t_{rr}	$V_R=50V, I_F=100A, di_F/dt=100A/\mu s$		86		ns
Reverse recovery charge	Q_{rr}			232		nC

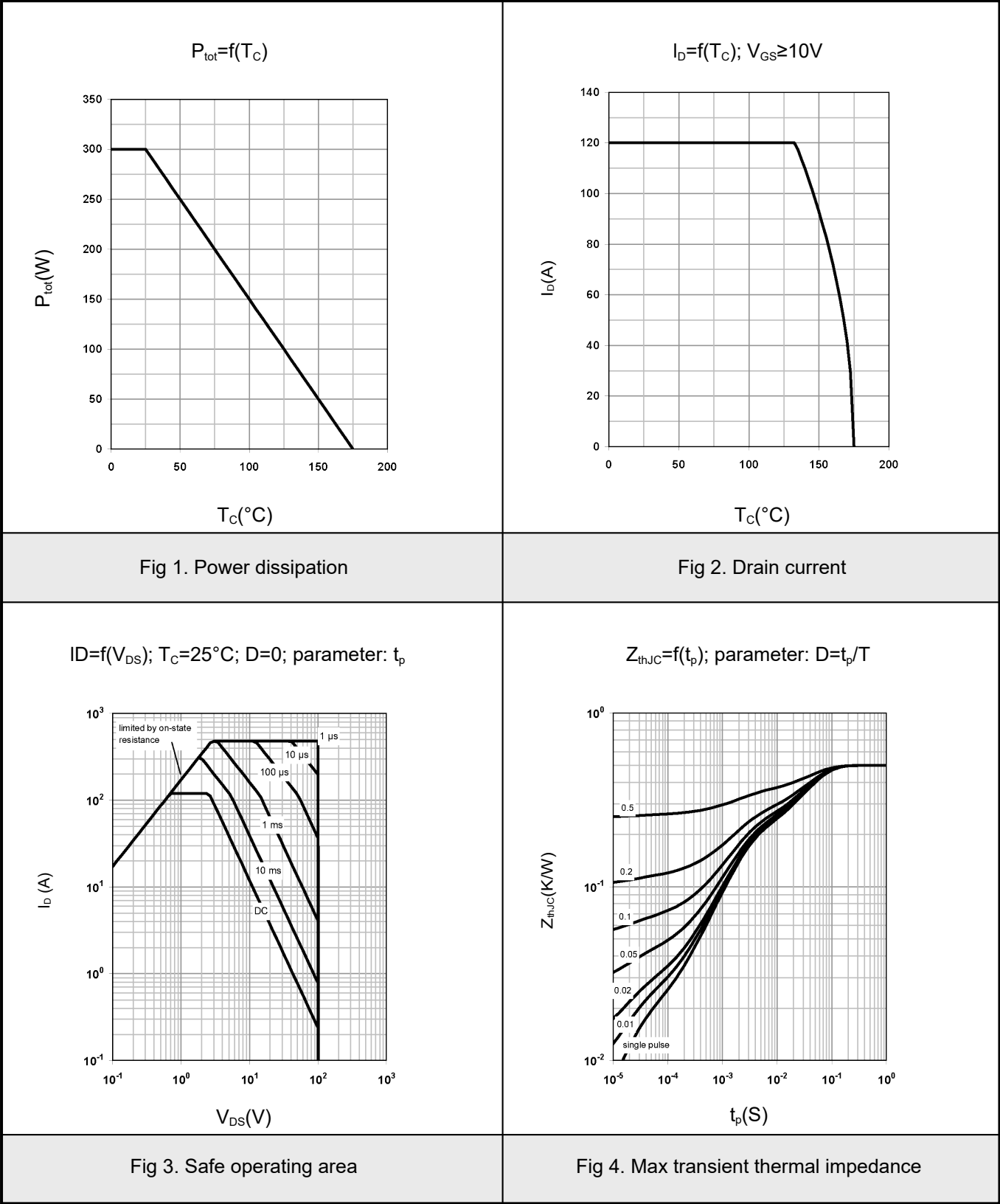
Notes:

Device on 40 mm x 40 mm x 1.5 mm epoxy PCB FR4 with 6 cm² (one layer , 70 um thick) copper area for drainconnection .

PCB is vertical in still air.

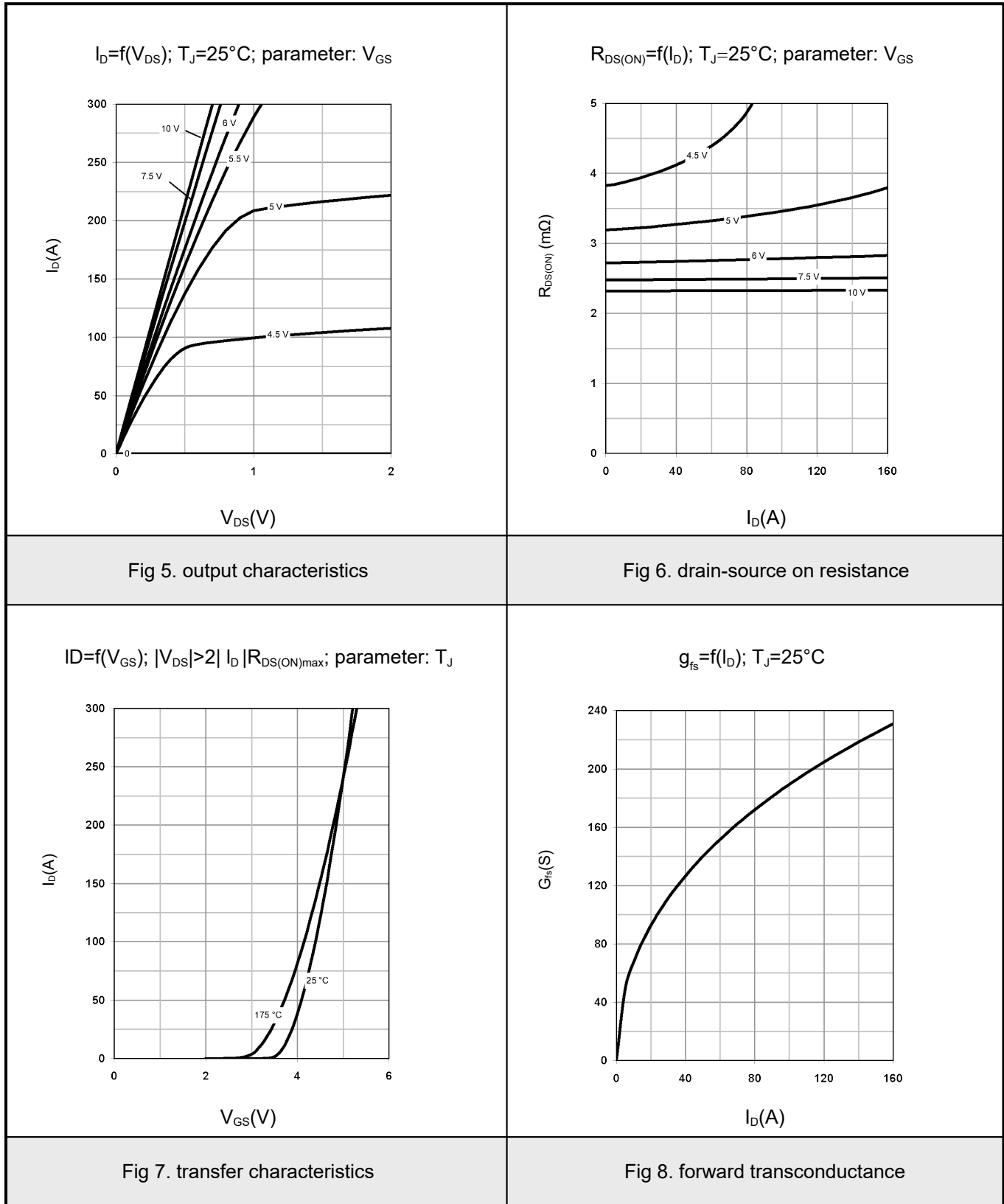


5.1Typical characteristic



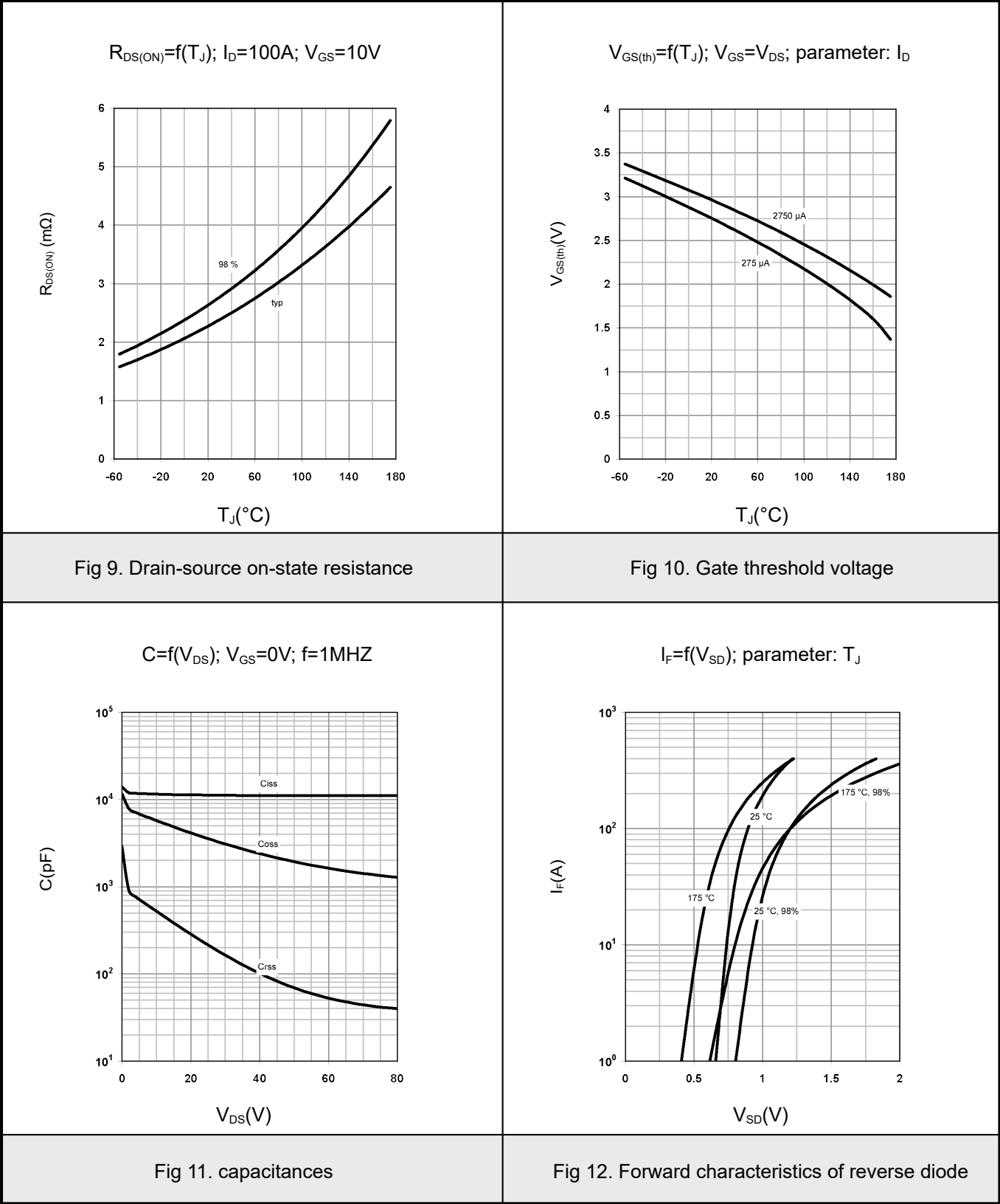


5.2Typical characteristic



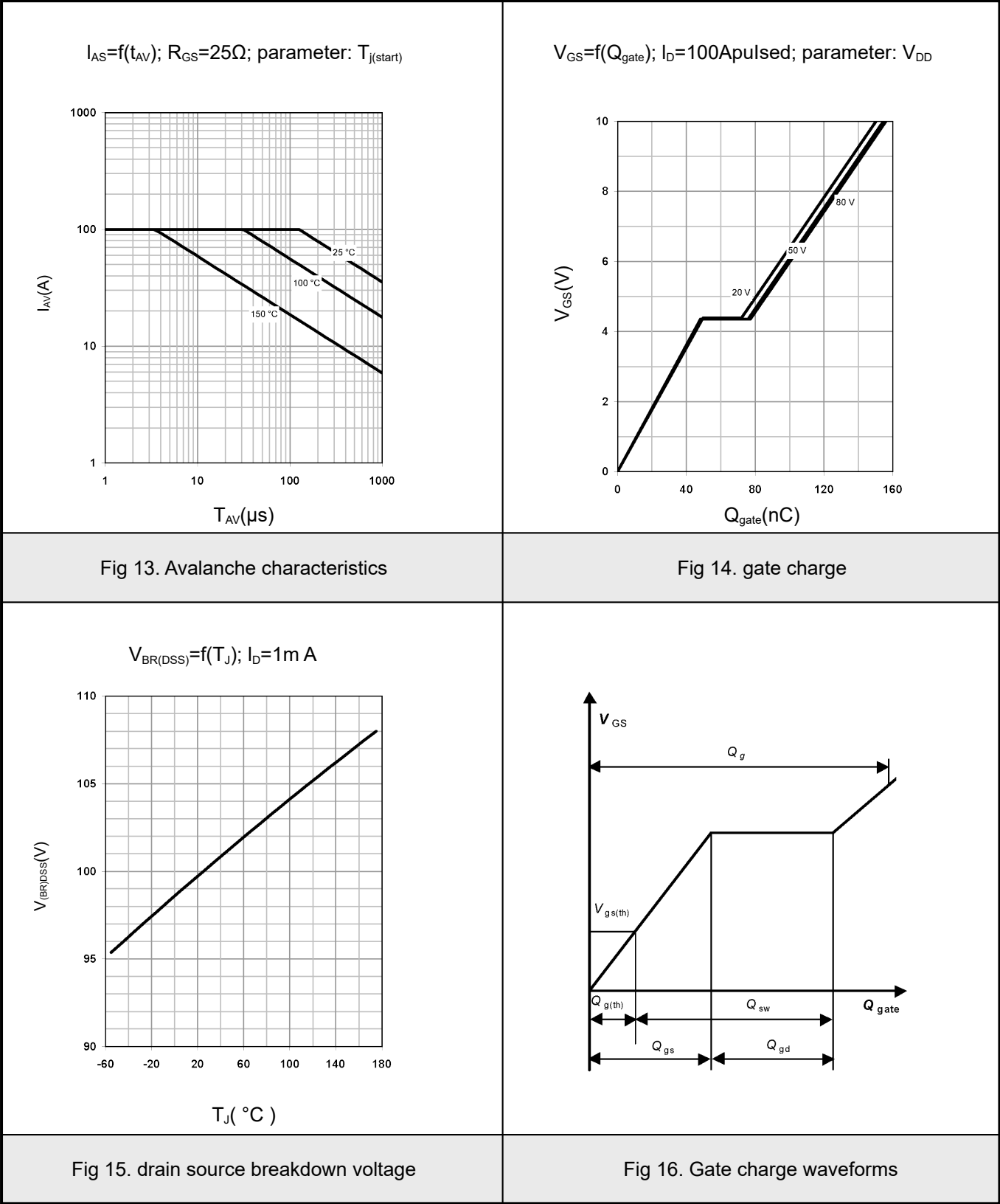


5.3Typical characteristic



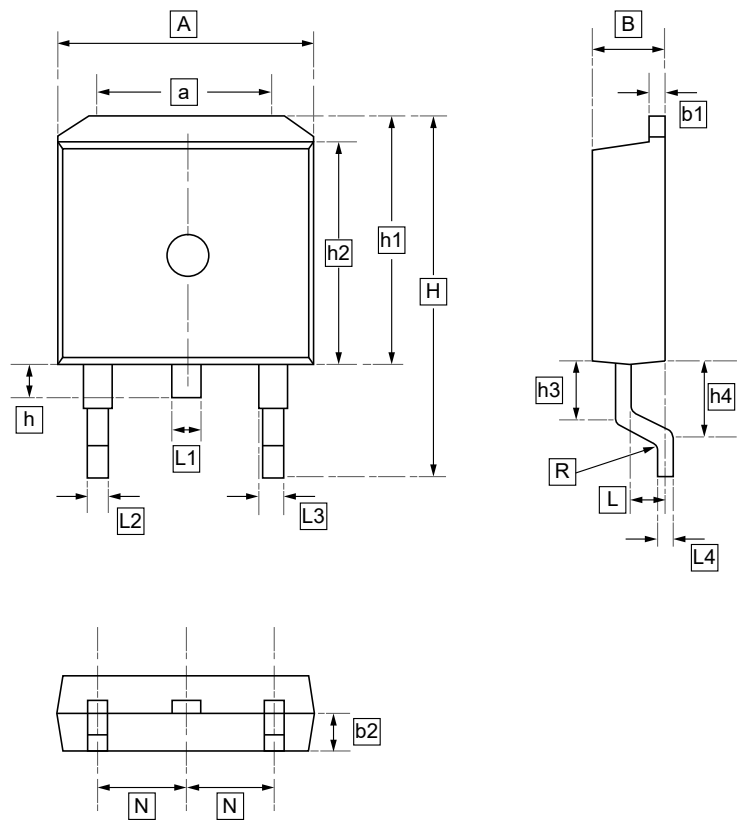


5.4Typical characteristic





6.TO-263 Package Outline Dimensions



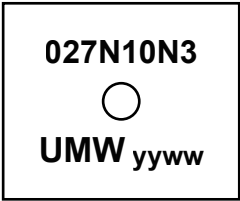
DIMENSIONS (mm are the original dimensions)

Symbol	A	a	B	b1	b2	H	h	h1	h2	h3	h4	L	L1	L2	L3
Min	9.6	7.2	4.3	1.25	2.2	15.2	1.34	10.3	9.1	1.34	2.5	2.2	1.2	0.7	1.2
Max	10.0	7.6	4.7	1.35	2.6	15.8	1.74	10.7	9.3	1.74	2.9	2.6	1.4	0.9	1.4

Symbol	L4	N	R
Min	0.4	2.4	0.45
Max	0.6	2.5	0.55



7.Ordering information



yy: Year Code
ww: Week Code

Order Code	Package	Base QTY	Delivery Mode
UMW IPB027N10N3 G	TO-263	800	Tape and reel



8.Disclaimer

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