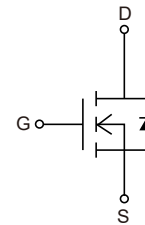
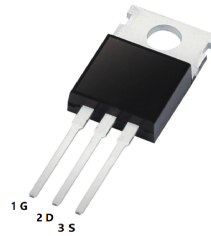


1.Features

- $V_{DS(V)}=100V$
- $I_D=80A$
- $R_{DS(ON)}<7.2m\Omega(V_{GS}=10V)$
- Ideal for high-frequency switching and synchronous rectification
- N-channel, normal level
- Very low on-resistance $R_{DS(ON)}$
- 175 °C operating temperature
- Pb-free lead plating RoHS compliant

2.Pinning information

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



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

Parameter	Symbol	Conditions	Rating	Units
Continuous drain current	I_D	$T_C=25^{\circ}C^{2)}$	80	A
		$T_C=100^{\circ}C$	70	A
Pulsed drain current ²⁾	$I_{D,pulse}$	$T_C=25^{\circ}C$	320	A
Avalanche energy, single pulse	E_{AS}	$I_D=80A, R_{GS}=25\Omega$	160	mJ
Gate source voltage	V_{GS}		± 20	V
Power dissipation	P_{tot}	$T_C=25^{\circ}C$	150	W
storage temperature	T_J, T_{STG}		-55 to 175	$^{\circ}C$
IEC climatic category; DIN IEC 68-1			55/175/56	



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

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Thermal resistance, junction -case	R _{thJC}				1	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 =90μA	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 =80A		6.2	7.2	mΩ
		V _{GS} =6V, I _D =40A		7.6	12.7	Ω
Gate resistance	R _G			1.6		S
Transconductance	g _{FS}	V _{DS} >2 I _D R _{DS(ON)max} , I _D =80A	50	99		μF
Input capacitance	C _{iss}	V _{GS} =0V, V _{DS} =50V, f=1MHz		3690	4910	pF
Output capacitance	C _{oss}			646		pF
Reverse transfer capacitance	C _{rss}			25		ns
Turn-on delay time	t _{D(on)}	V _{DD} =50V, V _{GS} =10V I _D =80A, R _G =3.6Ω		19		ns
Rise time	t _r			37		ns
Turn-off delay time	t _{D(off)}			37		ns
Fall time	t _f			9		nC
Gate to source charge	Q _{gs}	V _{DD} =50V, I _D =80A V _{GS} =0 to 10V		18		nC
Gate to drain charge	Q _{gd}			10		nC
Switching charge	Q _{sw}			16		nC
Gate charge total	Q _g			51	68	nC
Gate plateau voltage	V _{plateau}				4.9	



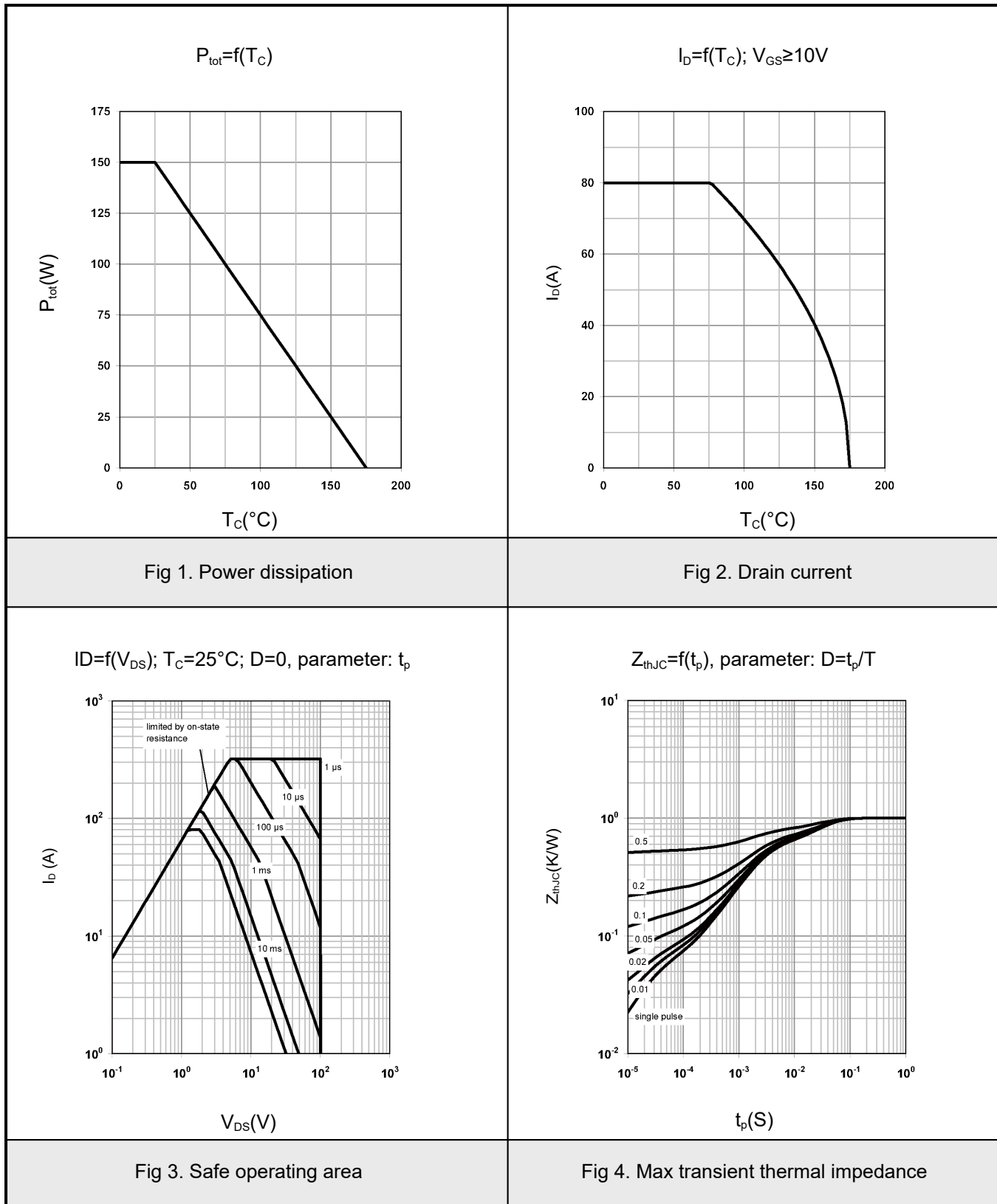
Output charge	Q_{oss}	$V_{DD}=50V, V_{GS}=0V$		68	91	nC
Diode continuous forward current	I_S	$T_C=25^\circ C$			80	A
Diode pulse current	$I_{S,pulse}$				320	A
Diode forward voltage	V_{SD}	$V_{GS}=0V, I_F=80A, T_J=25^\circ C$		1	1.2	V
Reverse recovery time	t_{rr}	$V_R=50V, I_F=I_S, di_F/dt=100A/\mu s$		73		ns
Reverse recovery charge	Q_{rr}	$V_R=50V, I_F=I_S, di_F/dt=100A/\mu s$		139		nC

Notes:

6) See figure 16 for gate charge parameter definition.

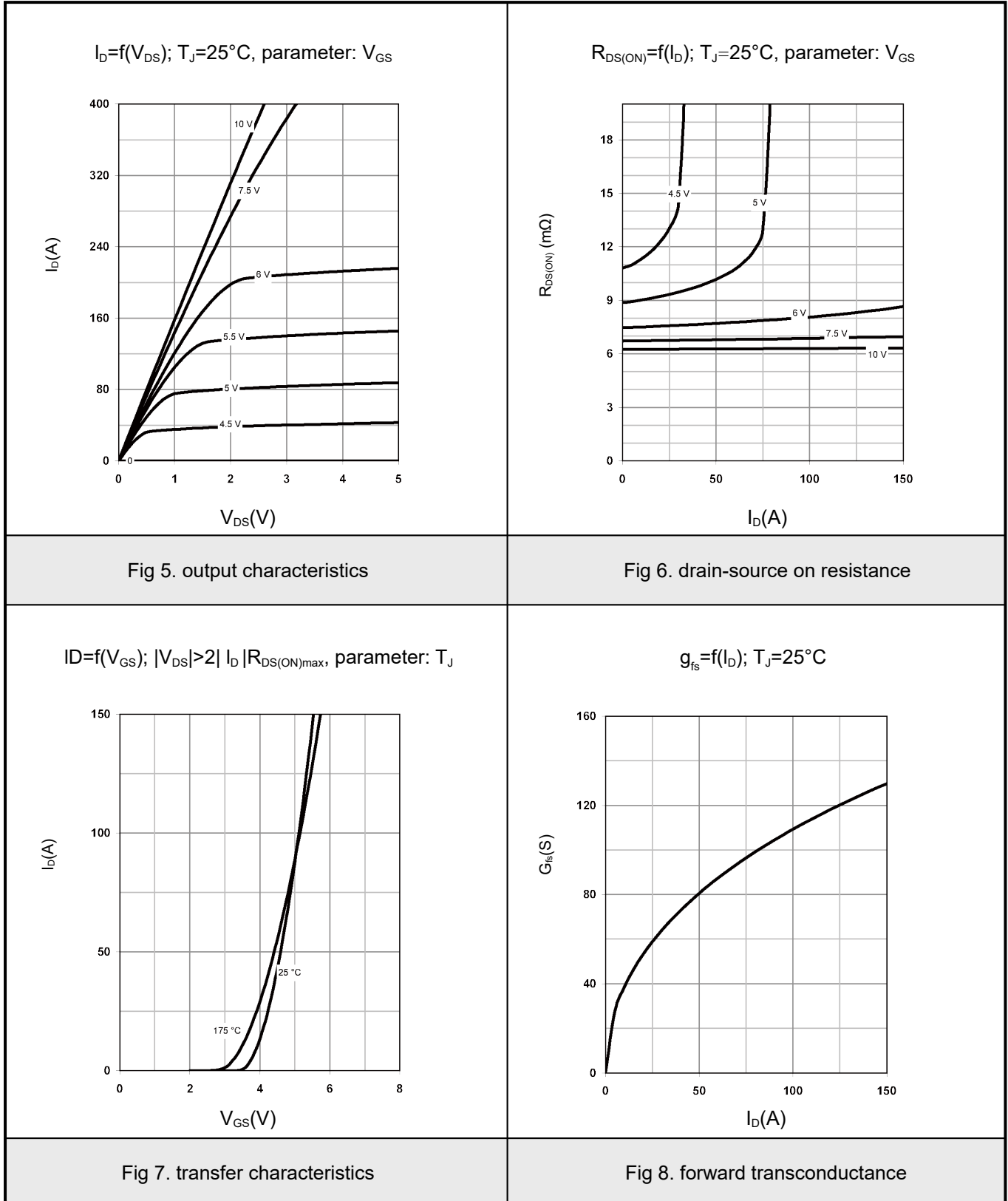


5.1 Typical characteristic



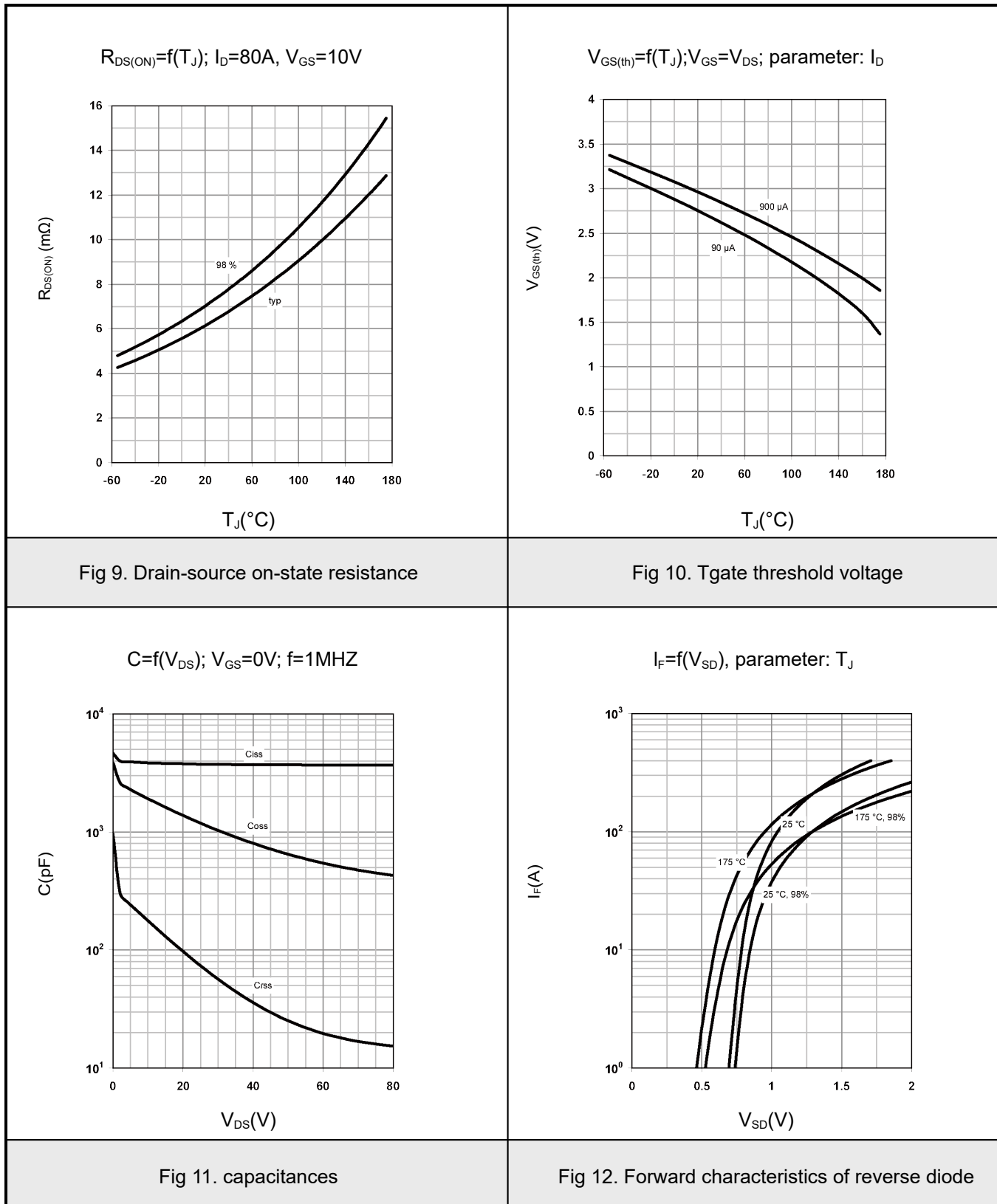


5.2 Typical characteristic



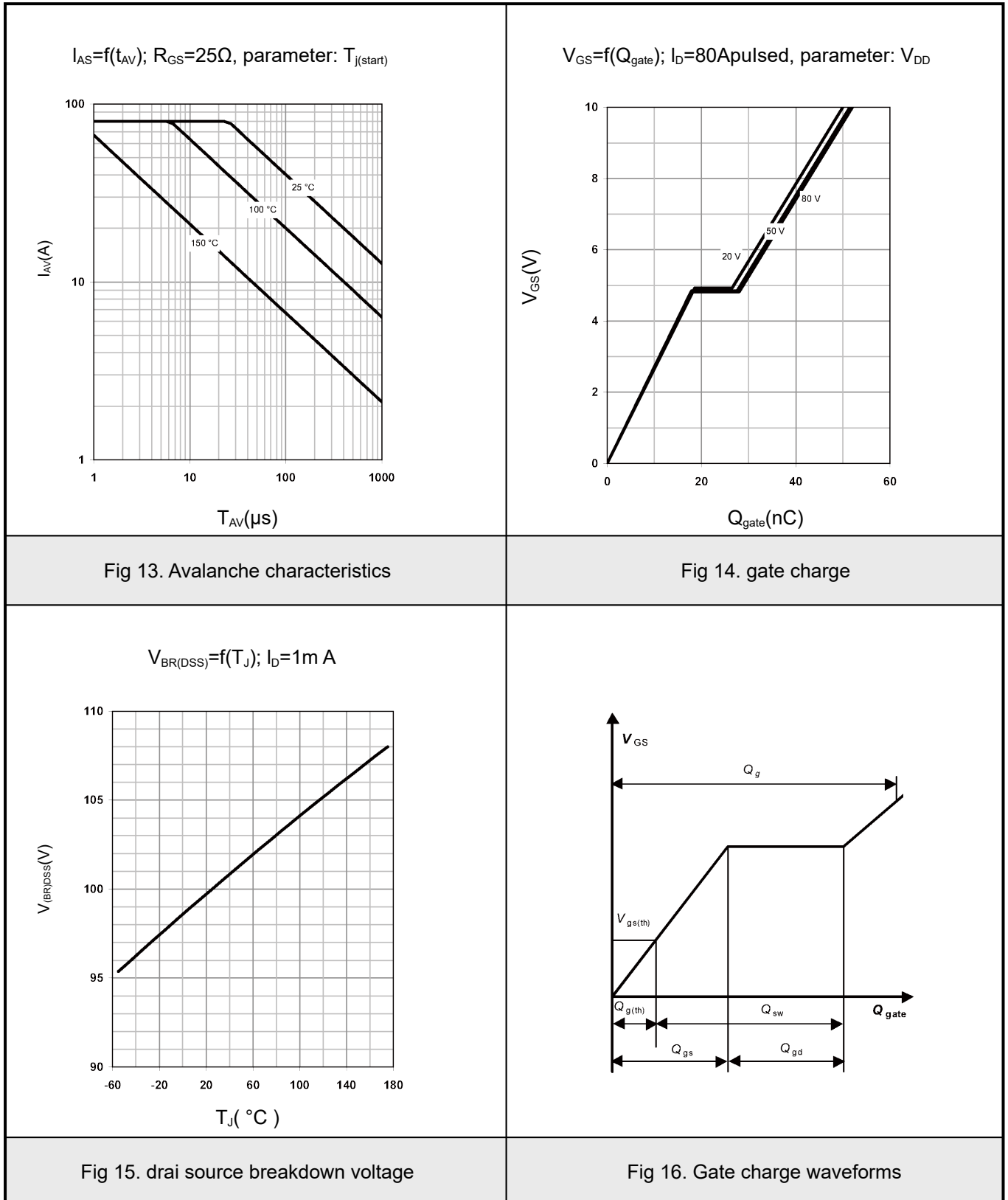


5.3 Typical characteristic



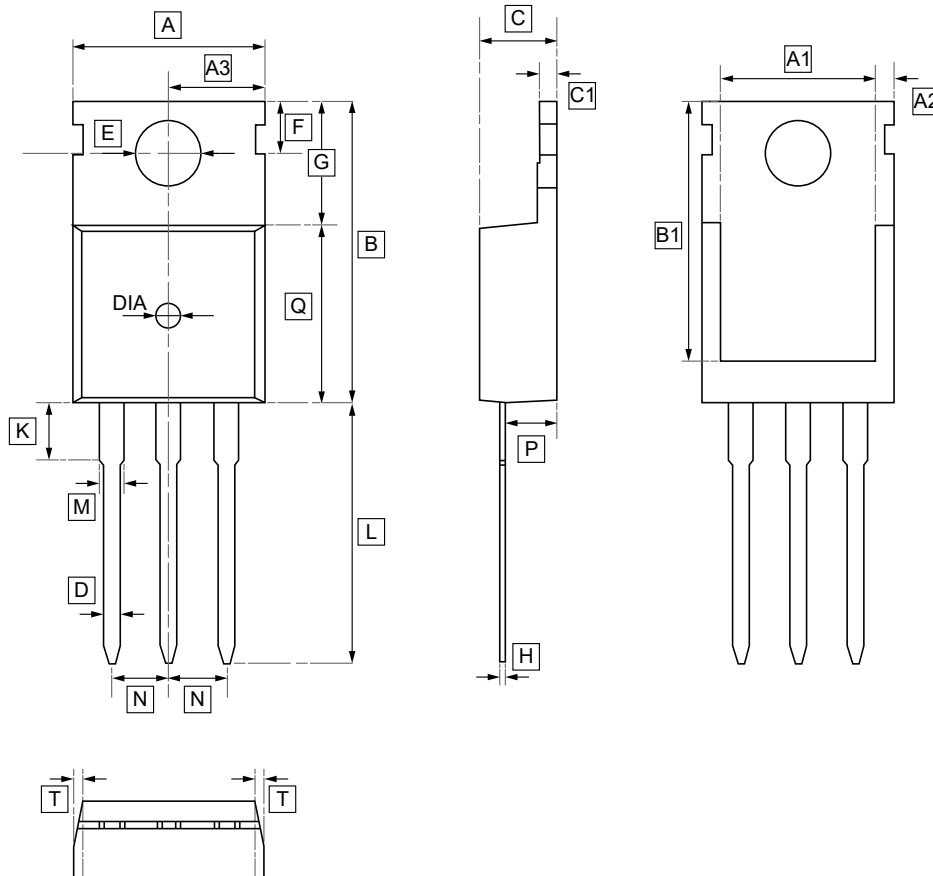


5.4 Typical characteristic





6.TO-220 Package Outline Dimensions



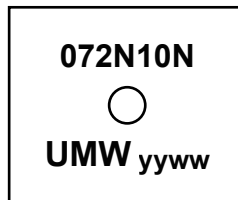
DIMENSIONS (mm are the original dimensions)

Symbol	A	A1	A2	A3	B	B1	C	C1	D	E	F	G
Min	9.7	8.44	1.05	4.8	15.4	12.9	4.28	1.1	0.6	3.4	2.65	5.2
Max	10.3	8.84	1.25	5.2	16.2	13.5	4.68	1.5	1.0	3.8	3.25	5.8

Symbol	H	K	L	L1	M	N	P	Q	T	DIA
Min	0.4	2.9	12.8	2.7	1.15	2.49	2.1	8.7	W:0.35	⊙1.5
Max	0.6	3.3	13.6	3.3	1.35	2.59	2.7	9.3		(deep 0.2)



7.Ordering information



yy: Year Code
ww: Week Code

Order Code	Package	Base QTY	Delivery Mode
UMW IPP072N10N3G	TO-220	1000	Tube and box



8.Disclaimer

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