

Ordering number : ENA1357



SANYO Semiconductors

DATA SHEET

P-Channel Silicon MOSFET
BBS3002 — General-Purpose Switching Device
 Applications

Features

- 4V drive.
- Load switching applications.
- Avalanche resistance guarantee.

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V _{DSS}		-60	V
Gate-to-Source Voltage	V _{GSS}		±20	V
Drain Current (DC)	I _D		-100	A
Drain Current (Pulse)	I _{DP}	PW≤10μs, duty cycles≤1%	-400	A
Allowable Power Dissipation	P _D	Tc=25°C	90	W
Channel Temperature	T _{ch}		150	°C
Storage Temperature	T _{stg}		-55 to +150	°C
Avalanche Energy (Single Pulse) *1	E _{AS}		340	mJ
Avalanche Current *2	I _{AV}		-60	A

Note : *1 V_{DD}=-30V, L=100μH, I_{AV}=-60A

*2 L≤100μH, Single pulse

Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	V(BR)DSS	I _D =-1mA, V _{GS} =0V	-60			V
Zero-Gate Voltage Drain Current	I _{DSS}	V _{DS} =-60V, V _{GS} =0V			-1	μA
Gate-to-Source Leakage Current	I _{GSS}	V _{GS} =±16V, V _{DS} =0V			±10	μA
Cutoff Voltage	V _{GS(off)}	V _{DS} =-10V, I _D =-1mA	-1.2		-2.6	V

Marking : BS3002

Continued on next page.

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BBS3002

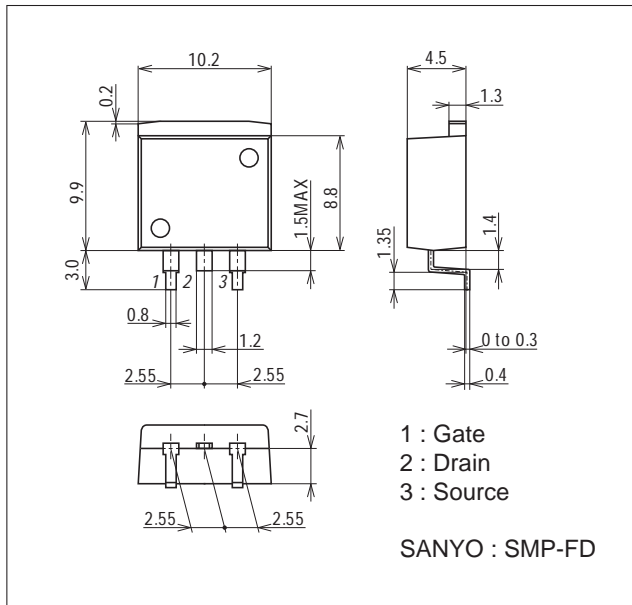
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=-10V, I_D=-50A$	54	90		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=-50A, V_{GS}=-10V$		4.4	5.8	$m\Omega$
	$R_{DS(on)2}$	$I_D=-50A, V_{GS}=-4V$		6.4	9.0	$m\Omega$
Input Capacitance	C_{iss}	$V_{DS}=-20V, f=1MHz$		13200		μF
Output Capacitance	C_{oss}	$V_{DS}=-20V, f=1MHz$		1300		μF
Reverse Transfer Capacitance	C_{rss}	$V_{DS}=-20V, f=1MHz$		950		μF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit.		95		ns
Rise Time	t_r	See specified Test Circuit.		1000		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit.		800		ns
Fall Time	t_f	See specified Test Circuit.		820		ns
Total Gate Charge	Q_g	$V_{DS}=-30V, V_{GS}=-10V, I_D=-100A$		280		nC
Gate-to-Source Charge	Q_{gs}	$V_{DS}=-30V, V_{GS}=-10V, I_D=-100A$		50		nC
Gate-to-Drain "Miller" Charge	Q_{gd}	$V_{DS}=-30V, V_{GS}=-10V, I_D=-100A$		55		nC
Diode Forward Voltage	V_{SD}	$I_S=-100A, V_{GS}=0V$		-1.0	-1.5	V

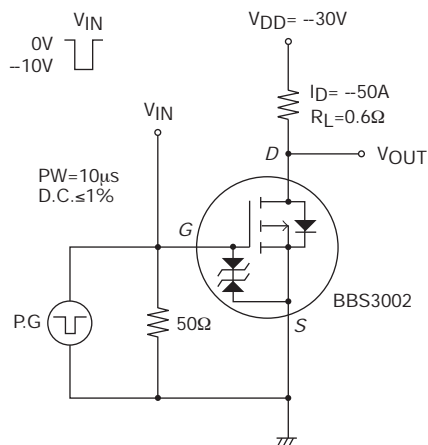
Package Dimensions

unit : mm (typ)

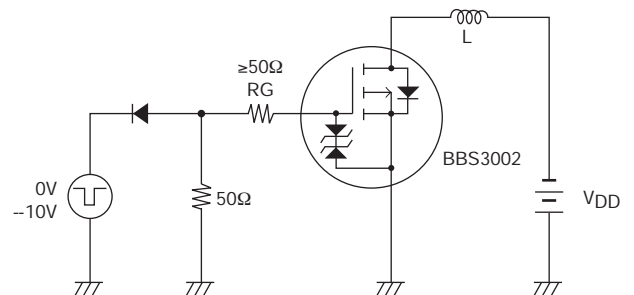
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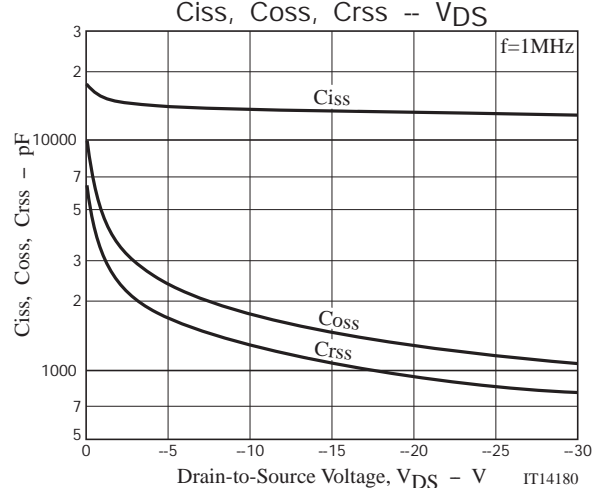
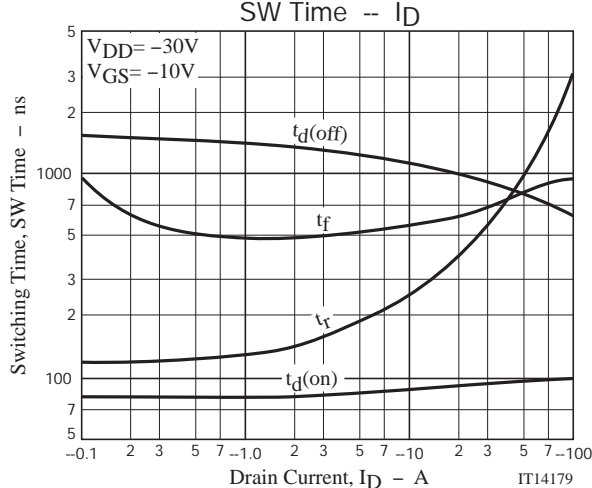
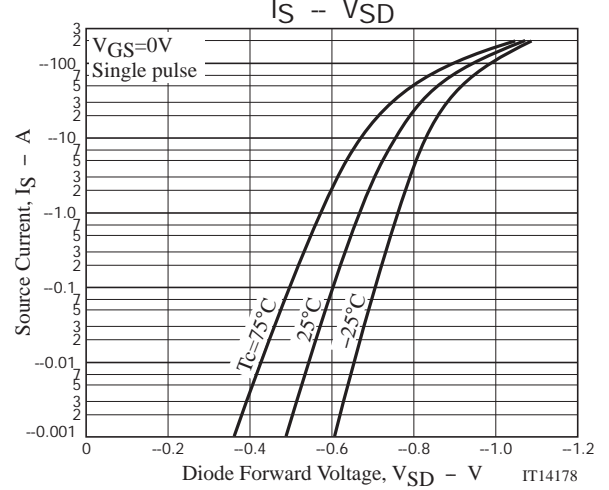
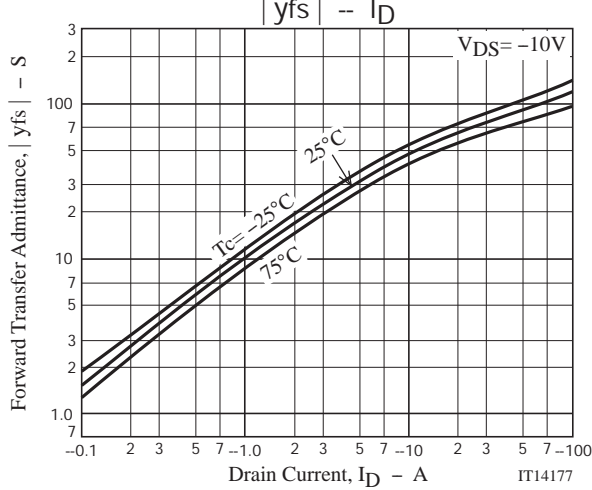
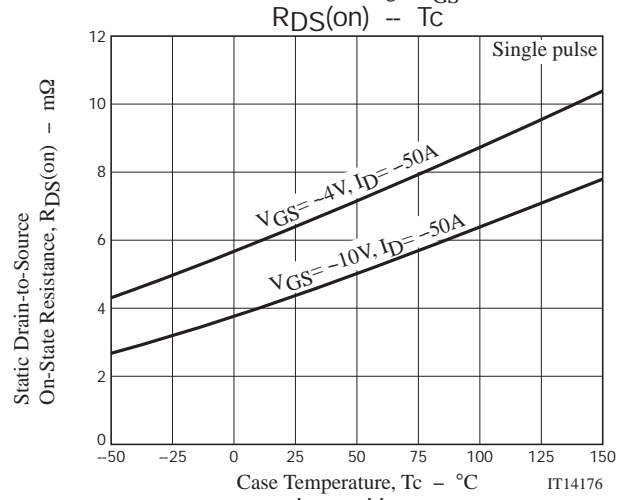
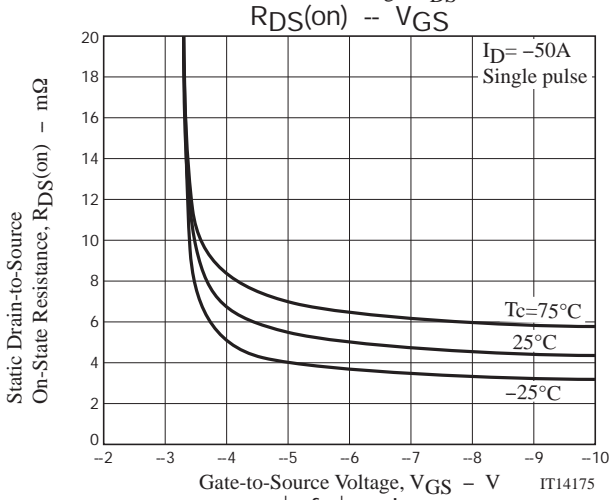
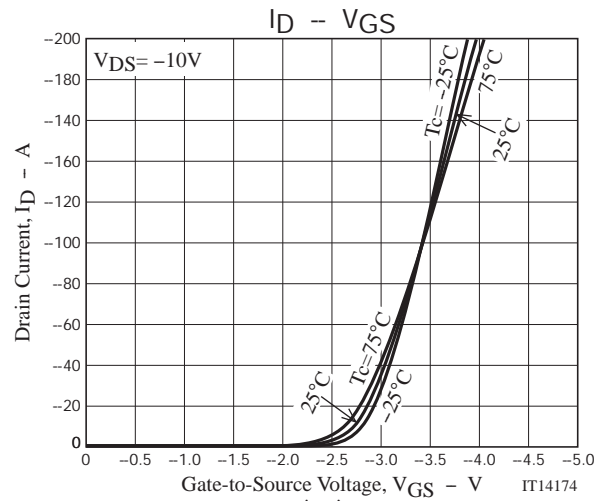
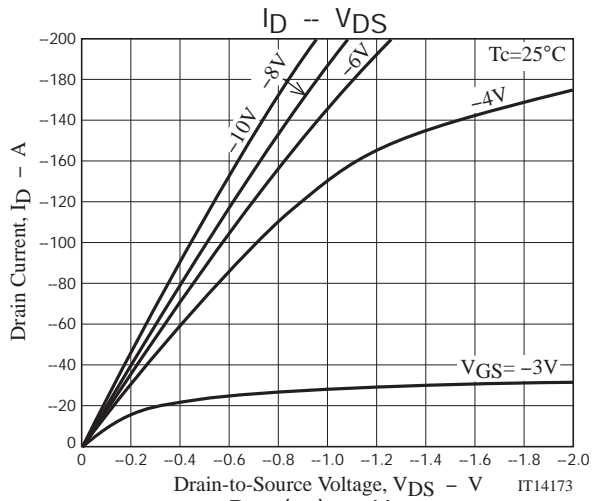
Switching Time Test Circuit



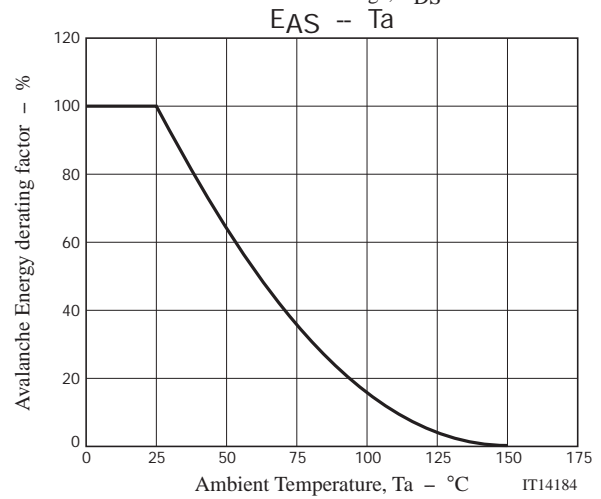
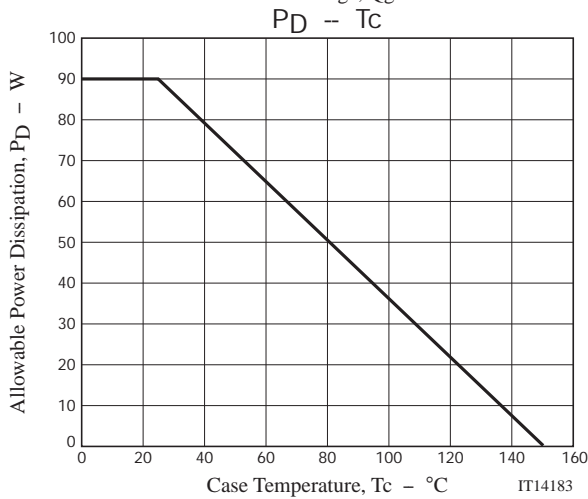
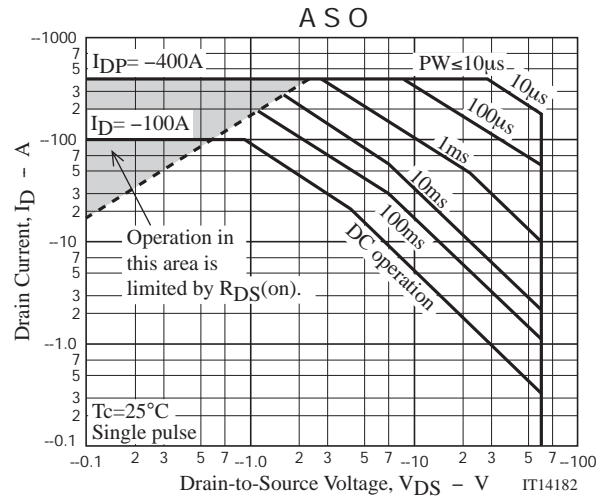
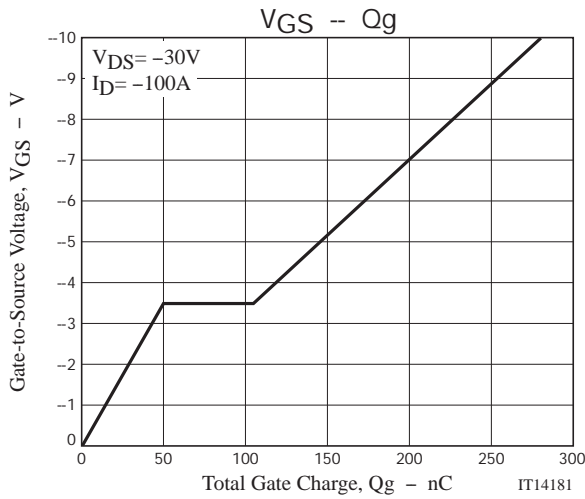
Avalanche Resistance Test Circuit



BBS3002



BBS3002



Note on usage : Since the BBS3002 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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