

Ordering number : ENN5442A

P-Channel Silicon MOSFET

**2SJ456**



**Ultrahigh-Speed Switching Applications**

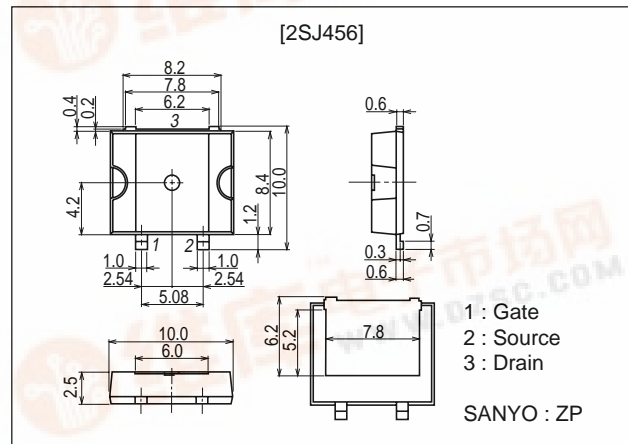
**Features**

- Low ON-resistance.
- High-speed diode incorporated.
- Enables simplified fabrication, high-density mounting, and miniaturization in end products due to the surface mountable package.

**Package Dimensions**

unit : mm

2128



**Specifications**

**Absolute Maximum Ratings** at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V <sub>DSS</sub>		-250	V
Gate-to-Source Voltage	V <sub>GSS</sub>		±30	V
Drain Current (DC)	I <sub>D</sub>		-9	A
Drain Current (Pulse)	I <sub>DP</sub>	PW≤10μs, duty cycle≤1%	-36	A
Allowable Power Dissipation	P <sub>D</sub>	Tc=25°C	50	W
Channel Temperature	T <sub>ch</sub>		150	°C
Storage Temperature	T <sub>stg</sub>		-55 to +150	°C

**Electrical Characteristics** at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	V <sub>(BR)DSS</sub>	I <sub>D</sub> =-1mA, V <sub>GS</sub> =0	-250			V
Gate-to-Source Breakdown Voltage	V <sub>(BR)GSS</sub>	I <sub>G</sub> =±100μA, V <sub>DS</sub> =0	±30			V
Zero-Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =-250V, V <sub>GS</sub> =0			-1.0	mA
Gate-to-Source Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> =±25V, V <sub>DS</sub> =0			±10	μA
Cutoff Voltage	V <sub>GS(off)</sub>	V <sub>DS</sub> =-10V, I <sub>D</sub> =-1mA	-2.0		-3.0	V
Forward Transfer Admittance	y <sub>fs</sub>	V <sub>DS</sub> =-10V, I <sub>D</sub> =-5A	4.8	8.0		S
Static Drain-to-Source On-State Resistance	R <sub>DS(on)</sub>	I <sub>D</sub> =-5A, V <sub>GS</sub> =-10V		0.4	0.55	Ω
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =-20V, f=1MHz		1950		pF
Output Capacitance	C <sub>oss</sub>	V <sub>DS</sub> =-20V, f=1MHz		505		pF
Reverse Transfer Capacitance	C <sub>rss</sub>	V <sub>DS</sub> =-20V, f=1MHz		230		pF

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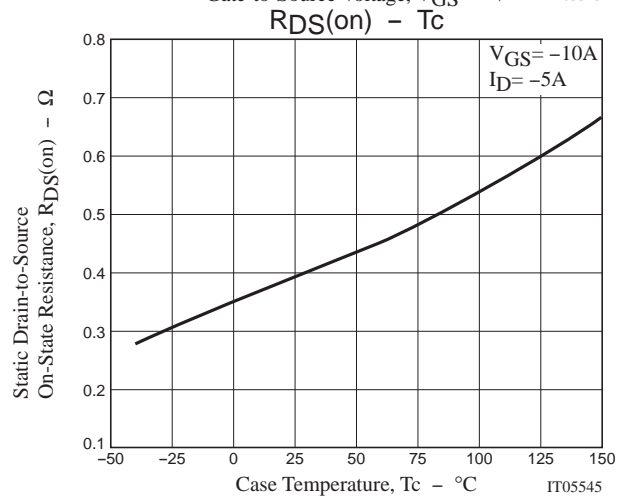
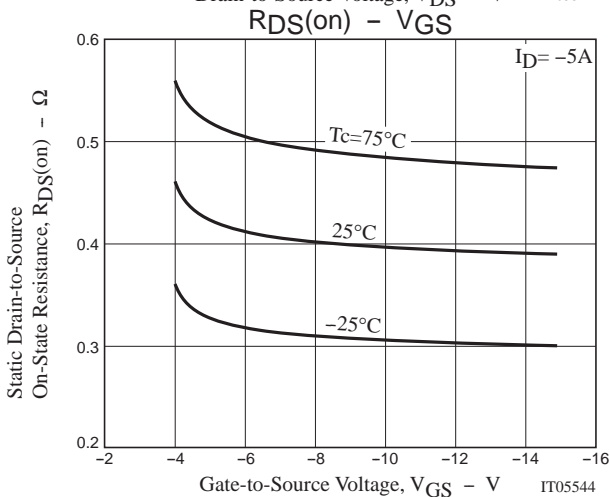
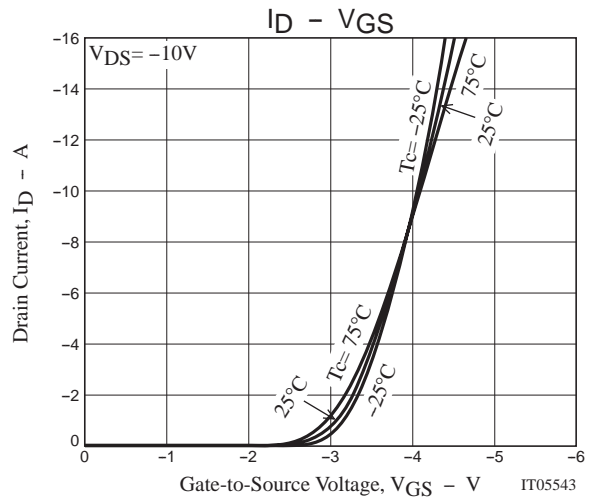
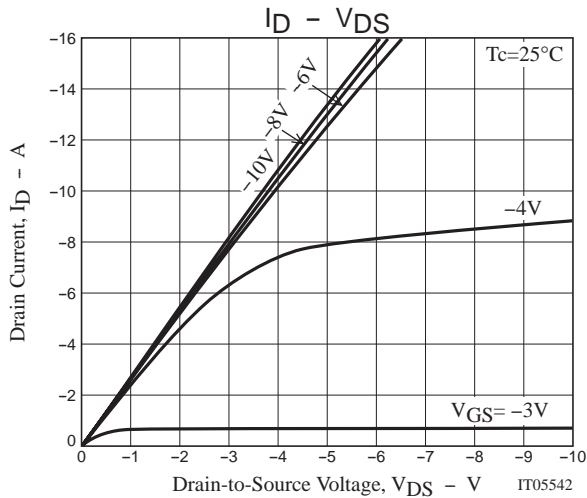
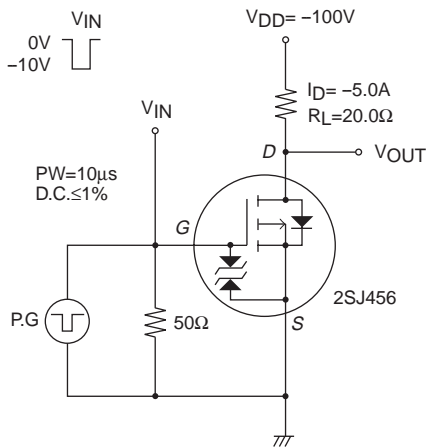


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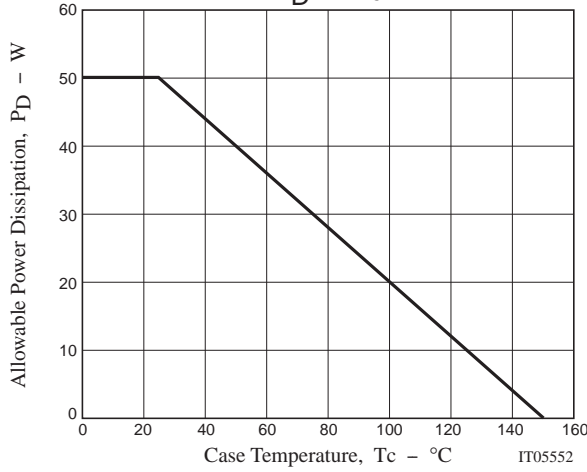
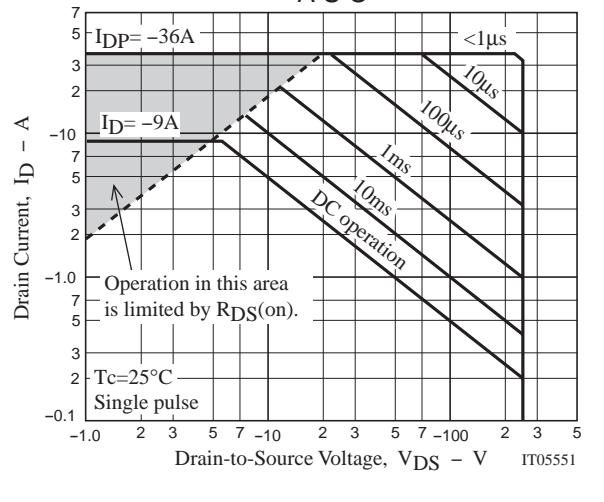
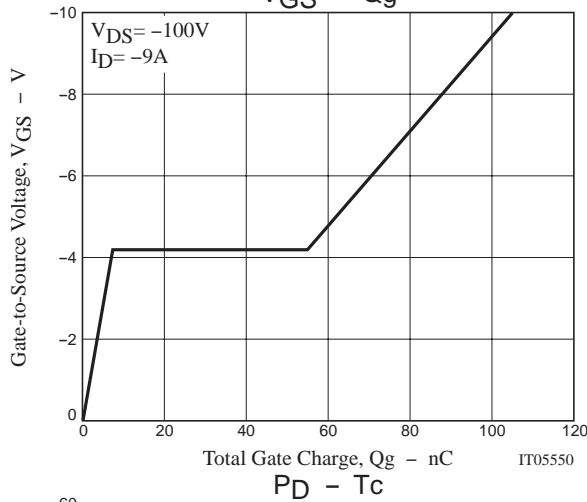
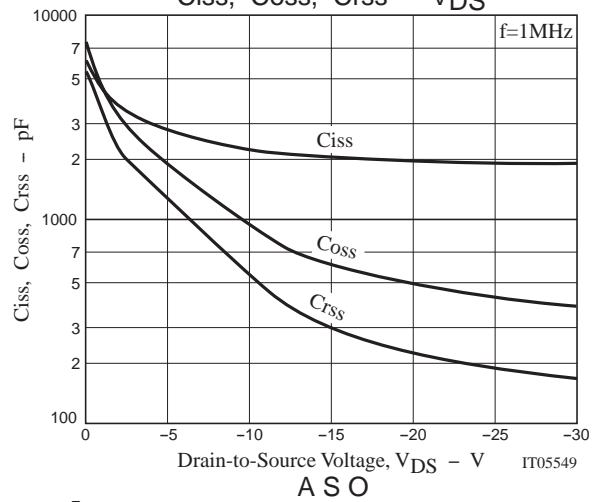
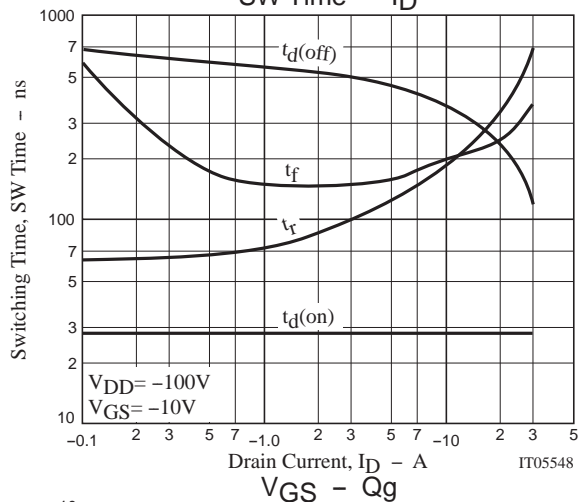
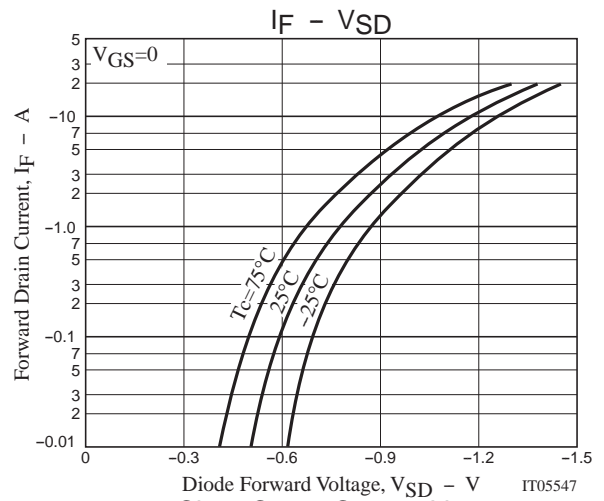
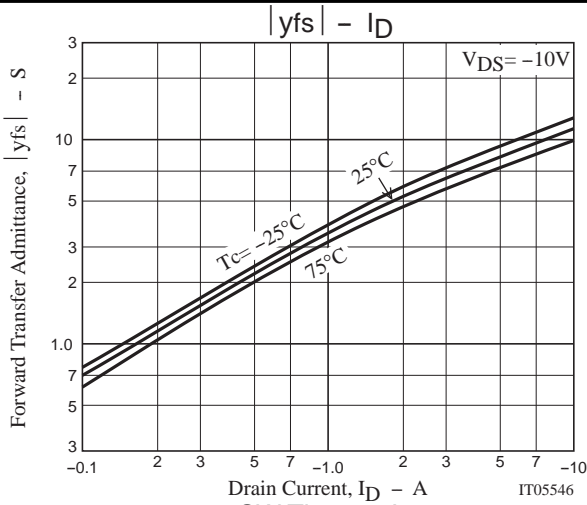
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Turn-ON Delay Time	$t_d(\text{on})$	See specified Test Circuit.		28		ns
Rise Time	$t_r$	See specified Test Circuit.		125		ns
Turn-OFF Delay Time	$t_d(\text{off})$	See specified Test Circuit.		460		ns
Fall Time	$t_f$	See specified Test Circuit.		160		ns
Diode Forward Voltage	$V_{SD}$	$I_S = -9A, V_{GS} = 0$		-1.0	-1.5	V
Diode Reverse Recovery Time	$t_{rr}$	$I_S = -9A, di/dt = 100A/\mu s$		180		ns

## Switching Time Test Circuit



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