

RoHS Compliant Product  
A suffix of "-C" specifies halogen and lead-free

## DESCRIPTION

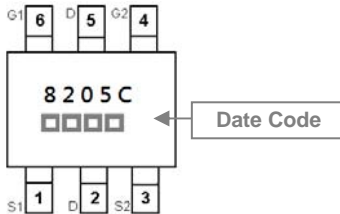
The SST8205S provide the designer with best combination of fast switching, low on-resistance and cost-effectiveness.

The SOT-26 package is universally used for all commercial-industrial surface mount applications.

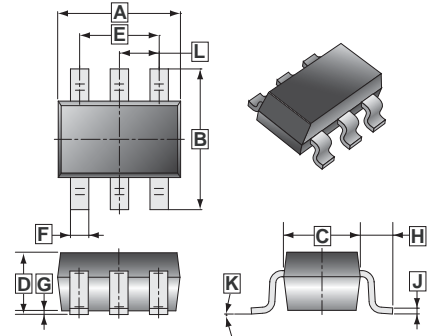
## FEATURES

- Low on-resistance
- Capable of 2.5V gate drive
- Low drive current

## MARKING



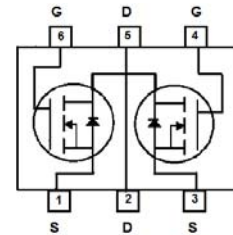
## SOT-26



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	2.70	3.10	G	0	0.10
B	2.60	3.00	H	0.60	REF.
C	1.40	1.80	J	0.12	REF.
D	1.30	MAX.	K	0°	10°
E	1.90	REF.	L	0.95	REF.
F	0.30	0.50			

## PACKAGE INFORMATION

Package	MPQ	Leader Size
SOT-26	3K	7 inch



## ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Ratings	Unit
Drain-Source Voltage	$V_{DS}$	20	V
Gate-Source Voltage	$V_{GS}$	$\pm 10$	V
Continuous Drain Current <sup>3</sup> , $V_{GS}@4.5V$	$I_D$	$T_A=25^\circ C$	6
		$T_A=70^\circ C$	4.8
Pulsed Drain Current <sup>1</sup>	$I_{DM}$	20	A
Power Dissipation	$P_D$	1.14	W
Linear Derating Factor		0.01	W / °C
Operating Junction and Storage Temperature Range	$T_j, T_{stg}$	-55~150	°C
<b>Thermal Resistance Rating</b>			
Maximum Junction to Ambient <sup>3</sup> Max.	$R_{\theta JA}$	110	°C / W

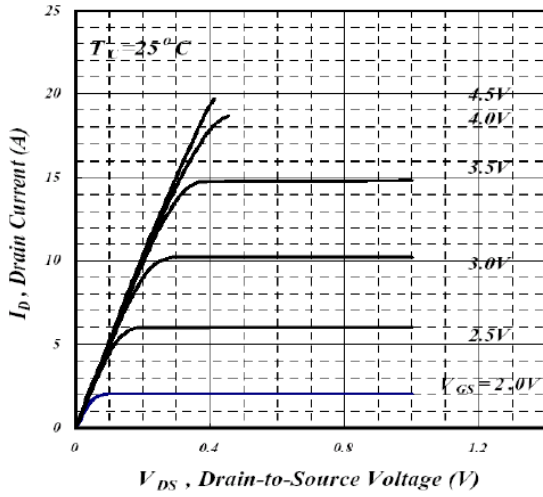
**ELECTRICAL CHARACTERISTICS** ( $T_J=25^\circ\text{C}$  unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions	
<b>Static</b>							
Drain-Source Breakdown Voltage	$BV_{DSS}$	20	-	-	V	$V_{GS}=0, I_D=250\mu\text{A}$	
Breakdown Voltage Temperature Coefficient	$\Delta BV_{DS} / \Delta T_J$	-	0.03	-	V/ $^\circ\text{C}$	Reference to $25^\circ\text{C}$ , $I_D=1\text{mA}$	
Gate-Threshold Voltage	$V_{GS(th)}$	0.5	-	1.5	V	$V_{DS}=V_{GS}, I_D=250\mu\text{A}$	
Gate-Body Leakage Current	$I_{GSS}$	-	-	$\pm 100$	nA	$V_{GS}=\pm 10\text{V}$	
Drain-Source Leakage Current	$I_{DSS}$	$T_J=25^\circ\text{C}$	-	-	1	uA	$V_{DS}=16\text{V}, V_{GS}=0$
		$T_J=70^\circ\text{C}$	-	-	25		$V_{DS}=16\text{V}, V_{GS}=0$
Drain-Source On-Resistance <sup>2</sup>	$R_{DS(ON)}$	-	-	28	m $\Omega$	$V_{GS}=4.5\text{V}, I_D=6\text{A}$	
		-	-	38		$V_{GS}=2.5\text{V}, I_D=5.2\text{A}$	
Forward Transconductance	$g_{fs}$	-	20	-	S	$V_{DS}=10\text{V}, I_D=6\text{A}$	
<b>Dynamic</b>							
Total Gate Charge <sup>2</sup>	$Q_g$	-	23	-	nC	$V_{DS}=20\text{V},$ $V_{GS}=5\text{V},$ $I_D=6\text{A}$	
Gate-Source Charge	$Q_{gs}$	-	4.5	-			
Gate-Drain ("Miller") Charge	$Q_{gd}$	-	7	-			
Turn-on Delay Time <sup>2</sup>	$T_{d(on)}$	-	30	-	nS	$V_{DS}=10\text{V},$ $V_{GS}=5\text{V},$ $R_G=6\Omega,$ $R_D=10\Omega,$ $I_D=1\text{A}$	
Rise Time	$T_r$	-	70	-			
Turn-off Delay Time	$T_{d(off)}$	-	40	-			
Fall Time	$T_f$	-	65	-			
Input Capacitance	$C_{iss}$	-	1035	-	pF	$V_{GS}=0\text{V}$ $V_{DS}=20\text{V},$ $f=1.0\text{MHz}$	
Output Capacitance	$C_{oss}$	-	320	-			
Reverse Transfer Capacitance	$C_{rss}$	-	150	-			
<b>Source-Drain Diode</b>							
Diode Forward Voltage <sup>2</sup>	$V_{SD}$	-	-	1.2	V	$I_S=1.7\text{A}, V_{GS}=0\text{V}$	

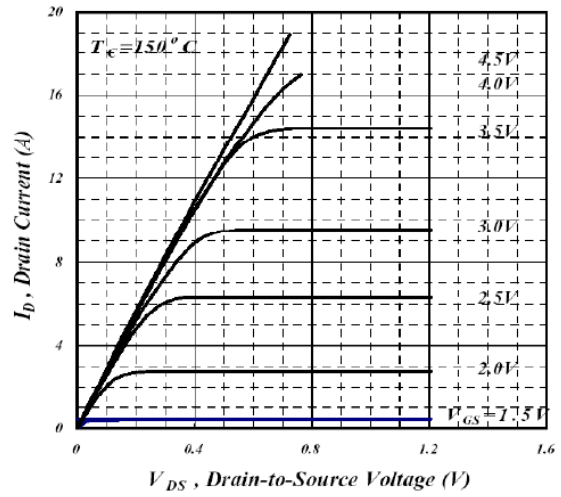
Notes:

1. Pulse width limited by Max. junction temperature.
2. Pulse width  $\leq 300\mu\text{s}$ , duty cycle  $\leq 2\%$
3. Surface mounted on 1 in<sup>2</sup> copper pad of FR4 board,  $t \leq 5\text{sec}$ ;  $180^\circ\text{C/W}$  when mounted on Min. copper pad.

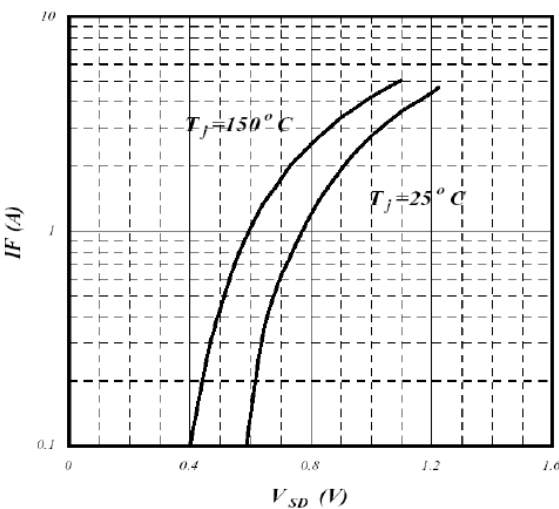
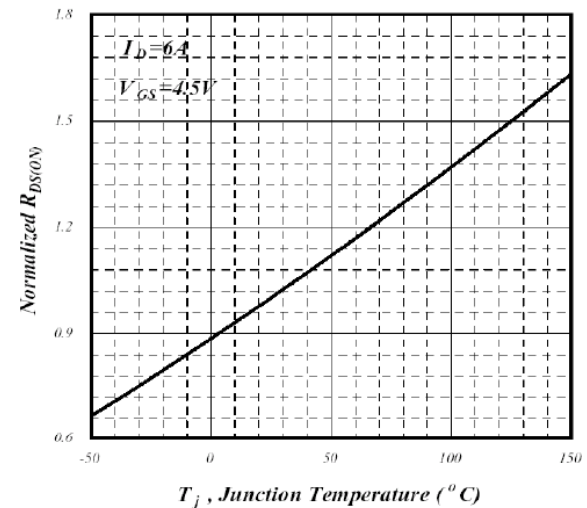
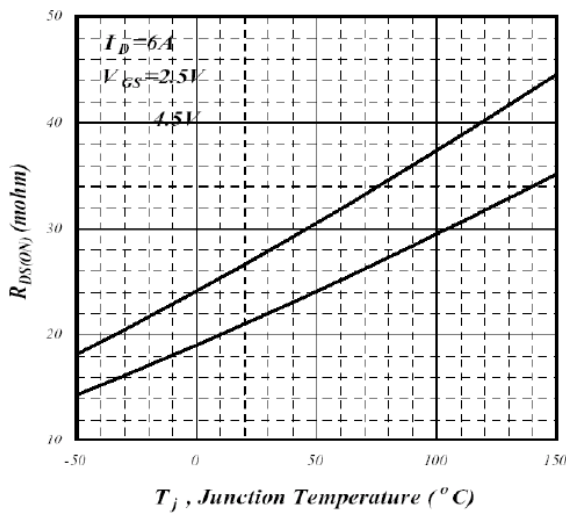
**CHARACTERISTIC CURVES**



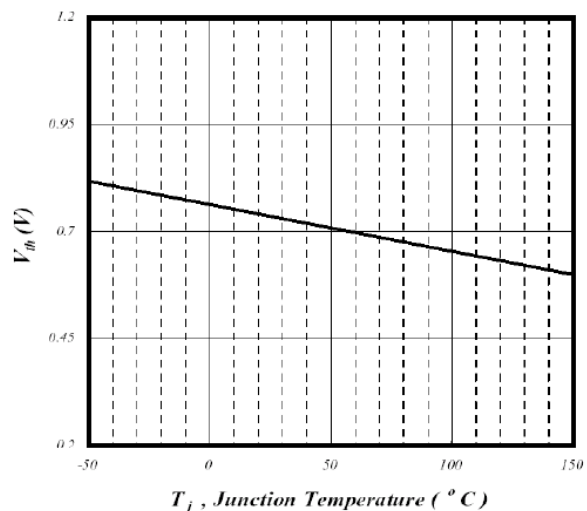
**Fig 1. Typical Output Characteristics**



**Fig 2. Typical Output Characteristics**

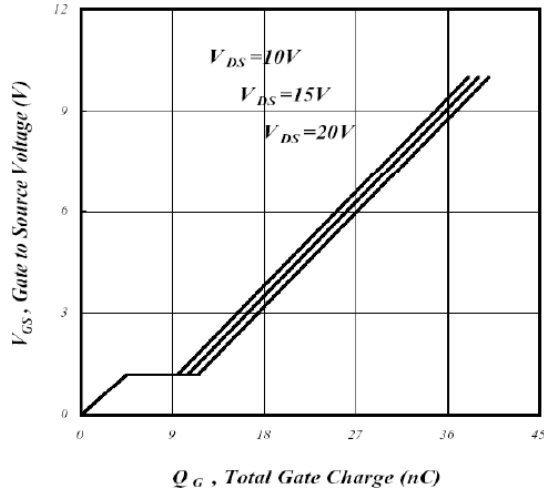


**Fig 5. Forward Characteristics of Reverse Diode**

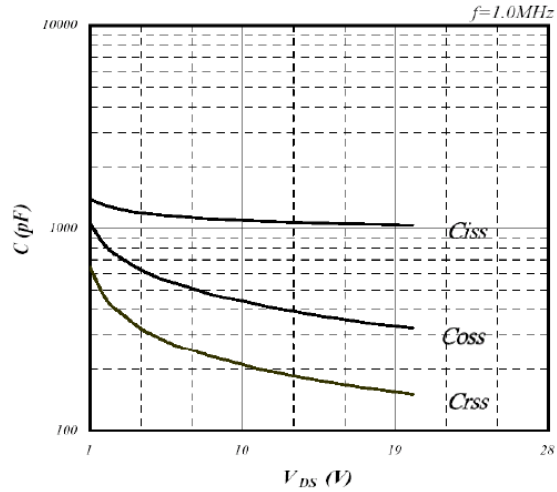


**Fig 6. Gate Threshold Voltage vs. Junction Temperature**

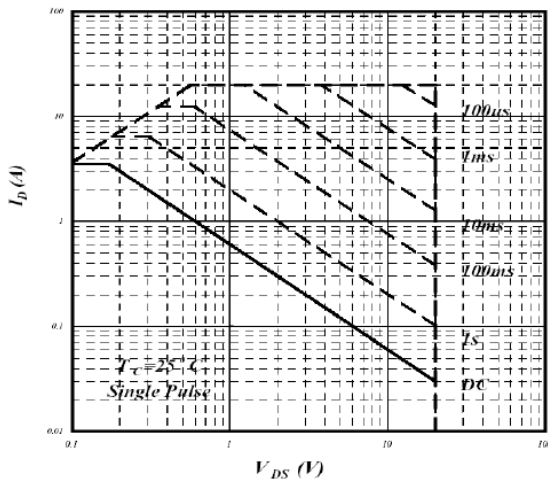
**CHARACTERISTIC CURVES**



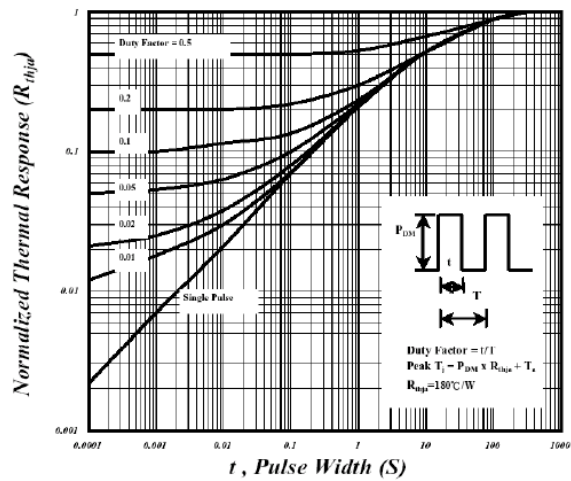
**Fig 7. Gate Charge Characteristics**



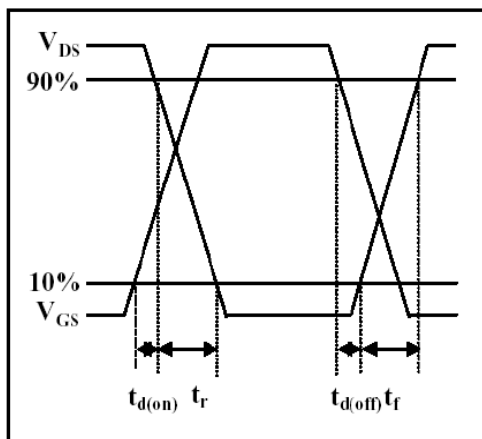
**Fig 8. Typical Capacitance Characteristics**



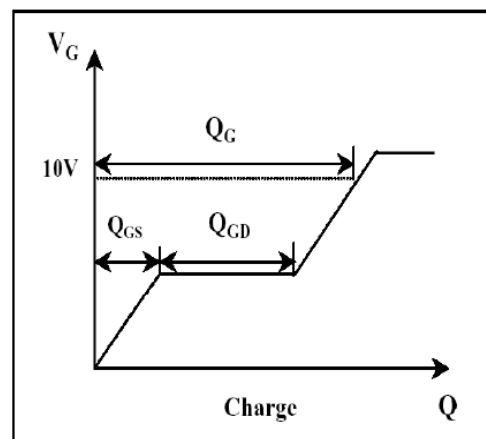
**Fig 9. Maximum Safe Operating Area**



**Fig 10. Effective Transient Thermal Impedance**



**Fig 11. Switching Time Waveform**



**Fig 12. Gate Charge Waveform**